84168-3

NO. 27652-0-III

IN THE COURT OF APPEALS
OF THE STATE OF WASHINGTON
DIVISION III

LARRY MICHAELS, and DEBBIE MICHAELS, husband and wife and the marital community comprised thereof;

DAN P. EVANS, a single person; and

KATHY D. CMOS, individually, and as Administratrix and Representative of the Estate of Mike P. Cmos, Jr.;

Respondents,

v.

CH2M HILL, INC., a Florida corporation and KELLY IRVING,

Appellants.

BRIEF OF APPELLANTS

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INTRODUCTION

This appeal arises out of a bizarre series of events that caused a Spokane Water Reclamation Plant digester dome to collapse in May 2004. The plaintiffs are City employees killed or injured in the accident. The parties agree that the City of Spokane was negligent – perhaps reckless – in causing these injuries to City employees. But the City is immune from liability.

After a bench trial, the Honorable Robert D. Austin concluded that the appellants (CH2M Hill and Kelly Irving) – design professionals on a 10-year plant renovation – are not protected by the design-professional-immunity statute, owed a duty to the City's employees, breached the standard of care, and caused the plaintiffs' damages. The plaintiffs' judgments total over $7.5 million.

There is no question that these plaintiffs suffered terribly. But these design professionals, like the City, are statutorily immune. Moreover, they were neither asked nor required to insure City-employee safety under a contract expressly allocating that responsibility to the City. And it stretches causation far beyond the breaking point to conclude that these design professionals somehow caused the bizarre City negligence that immediately caused this tragedy. This Court should reverse and dismiss.

ASSIGNMENTS OF ERROR

1. The trial court erred in ruling that the design professional immunity statute does not bar this suit, on summary judgment and following trial.

2. The trial court erred in ruling that these defendants owed a legal duty to these plaintiffs, on summary judgment, motion for directed verdict, and following trial.

3. The trial court erred in ruling that these defendants proximately caused these plaintiffs' injuries on summary judgment, motion for directed verdict, and following trial.

4. The trial court erred in entering the following Findings of Fact: 33; 34 (to the extent that it implies Mr. Irving had the authority to decide where the skillets were placed); 37-39 (all legal conclusions); 40-44 (mostly legal conclusions); 46, 48, 56-59, 61-68, 94-95 (legal conclusions).[1]

5. The trial court erred in entering judgment.[2]

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[1] The Findings & Conclusions are attached as Appendix A, with highlighting indicating the specifically challenged portions of these Findings. The trial court incorporated its Memorandum Opinion into the Findings. CP 3107, attached as Appendix B. That Opinion contains no findings *per se*, but to the extent that this Court deems any Findings to be made in that Opinion, appellants hereby assign error to those Findings.

[2] CH2M Hill assigns no error to the damages, so none of the graphic, lengthy and detailed damages testimony is relevant here.

ISSUES PERTAINING TO ASSIGNMENTS OF ERROR

1. Does the design-professional immunity statute bar these City employees' suits?

2. Did these defendants owe a legal duty to insure the safety of City employees or to prevent the City's bizarre negligence, where no contract, statute or common law creates such a duty?

3. Did these defendants proximately cause the digester dome to collapse by failing to write an analysis of how the City's own interim fix could affect operations, where the City rejected the defendants' advice and told them not to do this analysis?

STATEMENT OF THE CASE

A. On May 10, 2004, Spokane's wastewater treatment plant suffered the overpressurization and collapse of a digester dome, killing City employee Mike Cmos, and injuring City employees Dan Evans and Larry Michaels.

On May 10, 2004, operators at the City of Spokane's Advanced Wastewater Treatment Plant over-pressurized a digester, causing its domed roof to collapse. City employees Mike Cmos and Dan Evans were on the dome when it collapsed. Mr. Cmos was killed and Mr. Evans was badly injured. RP 1029; CP 3108. City employee Larry Michaels also sustained injuries when sludge overflowed the digester. *Id.*

The digesters are round concrete tanks, 100 feet in diameter and 40 feet high, with domed concrete roofs anchored to the walls with steel rods. RP 272, 298; Ex 567.[3] The locations of features on the tanks are identified by their elevation measurements, from EL 1701 at the base of the digester, to EL 1740.58 at the base of the dome, a difference of 39.5 feet. App. D. The Digester Building, from which plant employees access the digester piping and valves, is a two-story building, with the lower and upper floors identified by the last two digits of their elevations (the "01 Level" is at EL 1701, the "17 Level" is at EL 1717). RP 174-75.

Exhibit 594 illustrates the solids processing system. Sludge is pumped through "Gravity Belt Thickeners" (GBTs) to reduce the sludge's volume through dewatering and thickening. RP 169-70; Ex 594. The raw, thickened sludge is pumped to one of the three digesters designated by plant operators. *Id.* Raw sludge enters a digester at between 60° and 70° F., and is heated to a temperature of 100° F. to encourage the destruction of pathogens in the waste. RP 171, 174. To maintain the proper temperature – critical to the

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[3] Ex. 566 is an aerial photograph of the plant (attached as Appendix C). The three digesters are named Digester 1 (D1), Digester 2 (D2) and Digester (D3). D3's roof collapsed on May 10. A diagram of D3 is contained in Ex 72, attached as Appendix D.

successful treatment of the waste – operators pull sludge out of digesters and pump it through heat exchangers before recirculating it back to the same digester. RP 171, 173-74. This process is typically repeated for an average of 20 to 30 days. *Id.*

Circulating sludge by pumping it from the digesters out to heaters and back into the digesters is "recirculation." *E.g.*, RP 617. Moving sludge among digesters is a "transfer." *Id.* There are "valving configurations" for each of these operations – the position the valves are in during that operation. RP 1948-49. A valve configuration is different from changing the valves, valving changes, or resetting the valves, which happen when an operator stops one operation and begins another. *Id.* These are all routine jobs for the City's employees, the digester operators. RP 909-10. As discussed below, the operators' failure to stop sludge from entering a digester was the immediate cause of the dome collapse.

B. The City's management and operations staffs had extensive experience and knowledge of plant operations, going back well over 20 years.

In May 2004, the Plant's Superintendent, Tim Pelton, a 30-year employee with a "Class IV" wastewater treatment plant operator license from the State under WAC 173-230-061, was responsible for all plant operations. RP 311, 1645-49; Ex 507. His

job duties included continuously reviewing plant maintenance and operations, both in person and through operating and laboratory reports, "in order to evaluate plant performance and determine the need for changes in methods of processes." RP 1647; Ex 529.

Mr. Pelton's 2004 management team included Mike Gavin, the Operations Supervisor in charge of supervising 24/7 shift operations for over two decades, a Class III operator (RP 310, 575, 1651; Ex 507); John King, the Maintenance Supervisor for over two decades, also a Class III operator for most of his time at the plant (RP 310, 1508, 1511-15, 1514); and Mike Coster, the Lab Supervisor, a Class IV operator (RP 310; Ex 507).

C. It is undisputed that the City was extraordinarily negligent – even reckless – in causing the digester dome to collapse, from management on down.

The plaintiffs stipulated that the City was negligent in causing the digester dome to collapse. *See, e.g*, RP 289 ("THE COURT: I think in opening everybody agreed that the City had liability. That's really not contested"). A great deal of evidence supports that stipulation. As discussed below, the City was negligent on the long-term management and general operations levels, and on the specific operations level on May 10.

1. On the long-term management level, the City failed to establish reliable lines of communication, failed to create an accountable chain of command, and failed to give clear and specific orders and instructions.

The undisputed evidence at trial showed that the City failed to establish reliable lines of communication, create an accountable chain of command, and give clear orders and instructions. *See, e.g.*, RP 2084-91. Each of these high-level failures caused or substantially contributed to the dome failure on May 10. *Id.*

On communication and command, the City had placed Mr. King in charge of the digesters, but he was the head of maintenance, putting him outside the normal operations chain of command. RP 1515, 1653-54, 2084. The operators did not like receiving instructions from the maintenance supervisor. *See, e.g.*, RP 2084. Plaintiff Michaels (Class III operator) was so concerned about the City's installation of "skillets"[4] in the piping (discussed below) that he told another operator not to make transfers without written instructions, yet he did not mention this to Mr. King. RP 1266. And Class III operator Robert Hetnar was troubled by the

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[4] A "skillet" is a flat metal disc with a handle, shaped like a frying pan, which maintenance workers at the plant used to block flow into or out of pipes. The photographs in Ex 546 show plaintiff Dan Evans holding one of the skillets fabricated in May 2004. The City's installation of the skillets is discussed in detail, *infra*, Fact § D.

lack of communication between Mr. King and the operators. RP 990-91. He was also very concerned that very large, improper transfers were being made. *Id.*

The City also failed to give sufficiently specific and unequivocal standing orders and daily instructions to its operators. RP 2085-91. When written instructions were given, they were insufficient. RP 2086-87. For instance, prior to May 10, City management had told at least some of its operators that the City had installed "skillets" in the piping, but then "instructed" them on the effects of the skillets by writing, "You would be best served by going thru a trace of the system." Ex 544. Even the Standard Operating Procedures for valving transfers were nonspecific, saying things like, "Ensure all necessary valves are open to allow a clear path from the draw off to the proper pump." Ex 508, p. DT-20. This sort of non-instruction was rampant in operations, violating the City's most basic standard of care. RP 2089-91.

2. On the general operations level, the City disabled the digester's overflow-prevention safety devices, ignored clear indications that the overfill-warning safety devices were dangerously under-reporting, and failed to train operators in emergency overflow safety procedures.

The City's negligence on the general operations level was even more egregious. *See, e.g.*, RP 2077-83. First, the City

disabled all of the overflow-prevention safety devices on the digesters. *See, e.g.*, RP 288-89. Originally, overflow pipes led into an overflow box, allowing excess sludge to flow out of a digester if the tanks were overfilled. RP 178, 275-76; Exs 72, 502 (D6-P-6), 563.[5] From there it flowed out safely through a pipe and down to "box A" at the other end of the plant. *Id.*

Incredibly, the City welded a metal plate over this fail-safe overflow pipe on D3, sealing it many years ago, around 1980. RP 186, 668, 690; Ex 563.[6] But the City never modified the original engineering drawings to show this change to the overflow fail-safe. RP 278-79. The operators at the plant were generally unaware that this fail-safe was disabled. RP 1228. Even a supervisor who had been at the plant for decades did not know about this. RP 1994.

The alternate overflow safety device on D3 was called the "supernatant tree." RP 826-27, 922, 1227; Ex 553 (photos of supernatant pipe). This standpipe has openings to the digesters at five different heights, each with a valve that can be opened and closed. RP 282, 1784-85; Ex 564. At least one of these valves was supposed to remain open at all times to provide overflow

[5] Exhibit 563 contains photographs of the overflow boxes.

[6] Exhibit 563 also contains photographs of this metal plate.

protection. RP 1790-91. Yet the plant had no written operating procedure on how to prevent an overflow of a digester or how to react in the event of an overflowing digester. RP 284-85.

On May 10, 2004, none of the valves on the supernatant tree was open and no functional overflow system existed on D3. RP 282-83. At least two of these five valves could and should have been locked in the open position at all times. RP 286-87. At some unknown time, operators or mechanics at the plant had closed all five of the supernatant-tree valves. RP 283, 1790. Again, the fact that all of these valves were closed was generally unknown to the plant's operators. *See, e.g.*, RP 826, 922, 1303.

In addition to disabling all of the overflow-prevention safety devices on D3, the City also disregarded clear indications that a computer system designed to monitor the pressure inside D3 and report it as a sludge level was badly malfunctioning. *See, e.g.*, RP 2080-83; Ex 71, p. 61. The digesters are opaque, under pressure, and cannot be opened, so they are equipped with internal pressure sensors tied into a computer system (called SCADA)[7] designed to provide real-time pressure readings as sludge levels. RP 176-77;

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[7] "Supervisory Control and Data Acquisition." Computerized SCADA systems gather data at wastewater treatment plants. CP 631-32.

Ex 71, p. 61. On May 10, the SCADA underreported the levels in D3 by 10 to 15 feet. RP 439; Ex 71, p. 61.

But this problem was not new: these inaccuracies had been going on for some time – certainly more than a few days, and likely since 2002. RP 439. Operators had called this problem to plant management's attention in the past. RP 440, 876-78; Ex 538. On April 26, 2004, for instance, Mr. Gavin noted during a supervisors' meeting that the "operators said they believe we pumped about 8 ft. to the digesters over the weekend, but digester level only reflects about ½ to 1 ft. change in levels." RP 441; Ex 538. Eugene Knox, a Class II operator, reported this to Mr. Gavin. RP 17716, 1782-83. Although this indicates that the SCADA sensors were malfunctioning, no one investigated or took action on it. RP 441.

On May 5, 2004, D3 experienced a "foaming" event (foam in the gas pipes at the top of the digester) indicating that sludge was coming up into the dome of D3. RP 295-96, 703. Failure-analysts Exponent criticized the City's failure to take this problem seriously, or to evaluate the SCADA's accuracy:

> Foam overflow from D3 on Mar. 5, 2004 was not taken seriously and reconciled with digester level reading. No effort was made to verify that the D3 level sensors were working correctly at that time.

Ex 71, p. 75; *see also* RP 296, 703.[8] Indeed, Exponent later found evidence of cracking on all three digester domes, proving that the City had previously over-filled and over-pressurized the digesters. RP 296-300, 699-700; Ex 568.

As the facts noted above demonstrate, the City failed to inform or train its operators about the disabled safety systems. Indeed, the City had absolutely no standard operating procedure for preventing an overflow. RP 284-85. Plaintiffs' own expert opined that the City was negligent in failing to have an operational overflow-prevention system. RP 288-89.

3. On the specific operations level, on May 10 the City badly overfilled the digester and engaged in repeated failures to exercise reasonable care, any one of which would have prevented this tragedy.

On May 10, 2004, the City's negligence reached its nadir. The litany of the City's extraordinary negligence is striking, from overfilling D3 to failing to take emergency steps to enable the overflow system. This negligence culminated in the City placing two men on an over-pressurized dome just before it collapsed.

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[8] The City hired Exponent to analyze what went wrong at its wastewater treatment plant in May 2004. RP 162. Exponent provides consulting services to industrial clients, conducting "failure analysis" to determine how and why something went wrong. RP 160-61.

a. The City badly overfilled the digester early on May 10.

On the graveyard shift, Sunday, May 9, 2004, operators began a transfer from D2 to D3 at 1 a.m. Ex 551. SCADA showed D3 to be at nearly 26 feet by 8 a.m. on May 10. Ex 558. But Exponent later determined that the sludge in D3 was much deeper, and already up inside the digester dome by that time. RP 394. The crew coming on in the morning of May 10 consisted of Terry Headley (the Operator III in charge in the control room upstairs, with over 20 years' experience); Rick Thain (Operator II in charge on the floor, with the plant since 2000, and with previous experience at another treatment plant); Gene Knox (Operator II, 28 years' experience); and Terry Fletcher (Operator I, 22 years' experience). RP 395, 786-87, 897-98, 909, 1776-77.

When Mr. Thain arrived at work that morning, he learned that the graveyard shift was transferring sludge into D3. RP 395, 864. He believed, however, that the graveyard shift had pumped too much sludge into D3, and he wanted to stop that transfer.[9] RP 397, 864. Mr. Headley agreed with Mr. Thain, and they successfully "secured" (or stopped) the D2-to-D3 transfer at 8 a.m.

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[9] Finding of Fact 46 (CP 3116) suggests that this concern did not arise until 2:00 p.m., but all of the evidence is to the contrary.

RP 398-99, 812, 847; Ex 551, p. 2. By that time, however, sludge had been transferring from D2 into D3 for 7 hours, an unusually long time. RP 813. As noted above, it was in the dome.

At the same time, plant supervisors held a regular supervisors' meeting. RP 399-400; Ex 550. Mr. King informed his colleagues that he wanted to transfer sludge from D2 into D3 until D2 fell to 20 feet, and then to transfer two feet of sludge out of D1 and put it into D2. RP 400; Ex 550. Mr. King decided that the operators should increase the sludge level in D3 to 28 feet, then immediately drop it back down to 26 feet via a transfer to D2. RP 1562. Mr. Gavin communicated these instructions, in writing, to Mr. Headley. RP 400, 584; Ex 555.

When operators received Mr. Gavin's instruction to start transferring more sludge into D3, the control room became "like a hornet's nest," as plaintiff Michaels described it. RP 401, 1273. While Mr. Michaels was filling in for a vacationing co-worker that day, and not acting as the lead operator, he stopped in the control room at various times during the day, usually during a break, to talk with other operators. RP 1150-51, 1272-76. The operators on duty that morning already believed that D3 was too full and challenged

Mr. Gavin's directive to transfer more sludge into it. RP 401, 879. The operators ultimately started another transfer anyway. *Id.*

Mr. Thain started transferring more sludge into D3 at about 9:50 am. RP 402, 814, 847-48; Ex 551, p. 2. SCADA showed D2 at almost 22 feet, and D3 at just over 26 feet at that time. RP 815; Ex 70, p. 4. Mr. Thain assumed that D3 could hold at least five more feet of sludge when he restarted the transfer. RP 865. Because SCADA was malfunctioning, his assumption was wrong.

b. The City workers failed to stop transferring sludge into the digester for three hours after ordered to do so.

Mr. King told Mr. Headley – lead operator in the control room on May 10 – not to let the level in D3 exceed 28 feet. RP 403. Operator Thain was also aware of this limit. RP 894. Mr. King called Mr. Headley at 11 a.m., who said that the transfer was nearly complete and that the reverse transfer would commence shortly thereafter. RP 402, 1564. Mr. Headley, who was supposed to be monitoring the SCADA readings that day, acknowledged that the sludge level in D3 reached 28 feet by noon. RP 388, 817-18; Ex 70, p. 5. Mr. King verified that Mr. Headley was beginning to transfer sludge out of D3. RP 1564. Yet Mr. Headley admitted that he did not order the transfer out of D3 until 2 p.m, by which time

SCADA showed the level in D3 to have risen to 32 feet. RP 818, 822-23; Ex. 70, p. 5.[10]

c. The City failed to heed many overfill-warning alarms.

By 1 p.m. on May 10, SCADA began sending out pressure alarms. RP 411, 820, 1385-86. Mr. Headley, whose duties included investigating such alarms, did not investigate the cause of these high-pressure alarms. RP 821. By 1:30 p.m., when SCADA showed the level near 32 feet (the maximum design level for D3) and sent out a "high high" pressure alarm, operators began to see foam ooze out of the pressure relief valves (PRVs) on the top of the D3 dome – an even more direct warning of over-pressurization. RP 405-06, 821, 848, 899, 1386, Ex 70, p. 5.[11]

At 1:44 p.m., SCADA sent another alarm. RP 1387; Ex 592, p. 6. Plaintiff Michaels relieved Mr. Headley in the control room for a few minutes at 1:45 – when SCADA showed a D3 level of 31.94 feet – but testified that he noticed no alarms or other problems at that point. RP 1296-98; Ex 558, p.5. Mr. Headley finally ordered

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[10] Again, this undisputed evidence contradicts F/F 46 (CP 3116) because Mr. Headley admits that he failed to start this transfer for several hours after reaching the upper limits Mr. King had instituted.

[11] Video footage of the "foaming event" is contained in Ex 556.

Mr. Thain to stop the D2 to D3 transfer at 2 p.m. RP 792. He, along with operators Thain and Fletcher, traced lines and stopped the transfer of sludge into D3 without incident. RP 412-13, 424-25, 792, 848, 872-73, 899-900, 906.

By about 2:15 p.m., however, plaintiff Michaels had arrived back in the control room and found no one there, which was unusual. RP 1160, 1277, 1278-79. Mr. Michaels stayed at the console, relieving the absent Mr. Headley. RP 1160. The D3 high-level alarms were still going off. RP 1161, 1277, 1280, 1301. The SCADA levels were over 33 feet – more than five feet above the operational maximum set by Mr. King. RP 1280-82. Mr. Michaels thought that this was neither an unsafe condition nor an emergency situation. RP 1284, 1300.

But he turned a security camera to look at the dome of D3. RP 1161, 1286, 1302.[12] He saw the foam sludge coming out of the PRVs. RP 1161, 1289, 1302. Mr. Headley returned. RP 1162,

[12] Mr. Michaels insisted that he did not go back to the control room (the second time) until 2:35, but the time-stamp on the security camera that he manually operated showed that he was actually there the second time by 2:14 p.m. RP 1285-86, 1288, 1295, 1299; Ex 556. The Senior Instrument Technician at the plant verified that he tested the camera after-the-fact, confirming that the time stamps were about 3 minutes fast. RP 1379. Mr. Michaels actually manipulated the camera from 1:53 to 2:02 p.m., and again from 2:14 to 2:19 p.m. RP 1381. On redirect, Mr. Michaels finally admitted that he was probably there by 2:15. RP 1309.

1302. Michaels showed Headley the PRVs. RP 1162. Mr. Michaels probably suggested making a pumped transfer out of D3. RP 1302. They called Mr. Pelton, who asked Michaels to gather his crew to meet at D3. RP 1162, 1303-04.

d. The City failed to ever stop raw sludge from feeding into the digester until after the collapse.

When he and the others went down to start the transfer out of D3 into D2 after 2 p.m., Mr. Fletcher asked and was told three times that no raw sludge was pumping into D3 from the GBTs. RP 914. But it was. RP 413-14. The operators had failed to completely shut off a valve on the raw sludge feed line or to simply turn off the pumps. RP 429, 1558. Neither process was complicated. RP 1558.

This flow from the GBTs continued into D3 until the dome collapsed at around 3 p.m. RP 425. Yet the pumps sending sludge from the GBTs could easily have been shut down even from the control-room console. RP 991-92. Notwithstanding any of the other errors that the operators made, plaintiffs' expert admitted that if the operators had successfully shut off this flow, the dome collapse would not have occurred. RP 429-30.

e. The City failed to properly transfer sludge out of the overfilled and overpressurized digester.

After Mr. Headley had finally ordered the operators to stop transferring sludge into D3 around 2 p.m., he then ordered them to transfer sludge back out of D3 and into D2. RP 823. The piping and valving system is intentionally very flexible, a redundancy permitting operators to choose any of several methods to route a transfer. RP 216, 2087-88, 2155-56, 2196. Mr. Headley watched Mr. Fletcher and Mr. Thain trace the lines and analyze the valving before starting the transfer. RP 824, 849, 851, 913-14.

Mr. Fletcher (1) opened the valve on the transfer line from D3 to D2 (which was the same valve to be opened either before or after the City installed the skillets discussed *infra*); (2) repositioned the three-way valve on level 17 (which would also have been positioned the same way to do this transfer both before and after the City's skillets); and (3) closed the recirculation valve on level 01 (which no longer mattered if the three-way was set correctly). RP 903, 915, 919.[13] Mr. Fletcher double-checked his work (RP 916)

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[13] This three-way valve on level 17 is also called a "three-port valve" in various places throughout the record. Exhibit 554 is a photograph of it.

but did not ask Mr. Headley for help because Fletcher was more familiar with the transfer process at that time. RP 825, 849.

Operators Fletcher and Thain chose to use the three-way valve on level 17 to transfer sludge out of D3. RP 413, 850, 902-03, 915. Although operators did not use the three-way valve on a regular basis (CP 3118 (F/F 53)) Mr. Thain had previously used it to transfer sludge out of D3. RP 850-51. This valve had a pointer that operators could aim at D3 to block the pipeline to D3, effectively forcing sludge into the transfer pipeline to D2. RP 918-19, 975. If the operator aimed the pointer toward D2, the valve would block the pipeline to D2, forcing recirculating sludge into the pipeline to D3. RP 975. If the operator aimed the pointer away from both digesters, pipelines to both D2 and D3 would be opened and sludge could flow in both directions. *Id.*

This crucial pointer is up inside a wheel that turns the three-way valve. RP 975-76. The wheel is nine feet above where the operator is standing. RP 976. The pointer is painted the same brown color as the wheel. *Id.* It is six-inches long. *Id.*

Mr. Fletcher knew after the City installed its skillets that the plant was recirculating (rather than transferring) sludge through different piping. RP 916. He correctly determined that to start

transferring sludge out of D3, he needed to stop recirculation by closing a valve on the recirculation line. RP 915. He also correctly determined that he could stop the recirculation using the three-way valve. *Id.* While Mr. Fletcher thought that he should also close, and did close, a second valve further down the recirculation line (believing this would "guarantee" that sludge did not flow back into D3, RP 917) this would have been redundant had he properly set the three-way valve. RP 903, 919. Closing this second recirculation valve was of no consequence that day. RP 920.[14]

According to the plaintiffs' experts, Mr. Fletcher did not position the three-way valve properly to transfer sludge out of D3 and into D2 because he aimed the pointer toward D2, thereby closing down the transfer line. RP 414-15. Mr. Fletcher believed that he set the pointer on the three-way valve to redirect the sludge flow into D2. RP 919; CP 3118 (F/F 54). Yet this was the only valve that failure-analysts Exponent said was incorrectly positioned on May 10. RP 414-15; CP 3118 (F/F 55).[15]

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[14] Fletcher's testimony contradicts the implication in many of the trial court's Findings that closing the valve on level 01 showed confusion.

[15] Plaintiffs hired Exponent employees Brugger and Moncarz as trial experts; even they contradict the trial court's findings that closing a valve on 01 showed confusion: ***only*** the three-way was turned incorrectly.

It is undisputed that on May 10 the operators took the skillet installation into account, traced the lines before acting, double-checked their work, and believed that they had set the transfer correctly. RP 849-50, 873-74, 904-06; CP 3117 (F/F 51). Although both operators believed that the City's skillets affected this transfer (but neither said how, RP 850-51, 906), Mr. Headley acknowledged that the skillets could not affect a transfer from D3 to D2 because the valve configuration was the same before and after the City installed the skillets. RP 806-07. The Operator III who came on for the next shift, Robert Hetnar, agreed that the skillets did not change how the three-way valve would be positioned for a transfer. RP 988.[16] Of course, with or without the skillets, there was always a risk that an operator could turn a valve the wrong way. RP 1622.

f. The City failed to make an emergency gravity transfer out of the digester.

As the alarms went off and the pressure rose, Mr. Headley told his operators that the situation was dangerous. RP 824-25. Mr. Fletcher said that Headley "started panicking." RP 907. Yet nothing prevented Mr. Headley from ordering the operators to start

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[16] All of this evidence contradicts F/F 48 (CP 3116) – implying a "changed valving" that did not occur – the three-way valve was set the same.

a gravity transfer (opening a line from a digester with a higher sludge level to one with a lower level) using pipelines with which the operators were familiar, instead of – or in addition to – the pumped transfer. RP 823-24, 875, 1559. It is uncontested that the skillets had no effect on how gravity transfers were performed. RP 966, 1558. Indeed, after the dome collapse, operators started both a pumped and a gravity transfer out of D3 at the same time. RP 986. But Mr. Headley never ordered a gravity transfer, despite believing that such a transfer would be faster and that the operators knew how to do it. RP 842, 874-75.

g. The City failed to take other readily available emergency measures or even to look carefully at this dangerous situation, and then placed two men on the dome despite their supervisor's ignorance of the true danger.

The operators had other means to stop the over-pressurization of D3. For instance, plant mechanic Brad Vanwert, who arrived an hour after the collapse, found D3 still overflowing. RP 1789; *see also* Ex 559 (photos showing D3 overflowing at 4 p.m., RP 1992-93). Mr. Vanwert checked the valving, found all of the valves on the supernatant tree completely closed, and opened one of those valves to start the overflow process. RP 1790-92. He also started a gravity transfer from D3 into both D2 and D1, and

began pumping sludge from D3 into old abandoned tanks known as gravity thickeners.[17] *Id.* He also opened a pipeline to feed D3 sludge into the belt filter presses. *Id.* Mr. Vanwert also discovered that raw sludge was still entering D3 from the GBTs, so he finally shut the raw feed off. RP 1793.

After Mr. Vanwert took these steps, the sludge immediately stopped overflowing and the level fell. *Id.* All of the operators knew how to perform each of these steps, and, once they knew that the sludge level in D3 exceeded 32 feet, any of these steps could have been taken to avoid the collapse. RP 1794, 1796.

D. The City is immune from liability, so the plaintiffs sued a design professional company hired to provide engineering consulting for a 10-year renovation of the Spokane wastewater plant – not to operate the plant.

Under the Industrial Insurance Act, the City is immune from liability for its negligence. CP 1603. The plaintiffs therefore sued CH2M Hill ("CH2M") and Kelly Irving, design professionals hired to provide engineering consulting for a 10-year renovation of the plant. *See, e.g.*, RP 1396-98; CP 3108-90 (F/F 7). As discussed below, these design professionals were not hired to run the plant.

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[17] The gravity thickeners, not to be confused with the GBTs, were settling tanks used at the plant before the GBTs were installed. RP 268; Ex 27.

1. The Agreement expressly allocated to the City all responsibility for City-employee safety, and provided that on-site consulting services would not shift these safety responsibilities away from the City.

In October 1998, CH2M and the City entered into a "Standard Consultant Agreement" (the Agreement) for program management and preliminary and conceptual engineering services for the City's Capital Improvement Project (CIP). Ex 1 (attached as Appendix E); RP 1397-99; CP 3109 (F/F 10). Since the City anticipated a decade of design changes, the City wanted the continuous presence of a design firm to coordinate work with the plant management and to provide process expertise in wastewater treatment. RP 1397-98. The City chose CH2M as the most qualified engineering firm to handle this job. RP 1398.[18] In 2004, Kelly Irving was the engineer working as CH2M's program manager at the plant. RP 509; CP 3109 (F/F 11).

The City, not CH2M or Mr. Irving, set all priorities for projects under the CIP. RP 1400. Tom Arnold, now the City Engineer, was the principle engineer in charge of negotiating the contract with CH2M, and monitored CH2M's work at the plant until February

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[18] CH2M is a 100% employee-owned company of diverse businesses founded in 1945 by an Oregon State University professor and three of his students. RP 1710-11, 1798.

2003, when he was promoted. RP 1399-1401. Mr. Arnold testified that the City did not ask and the contract did not require CH2M to perform any plant-safety audits. RP 1400. Superintendent Pelton confirmed that he never asked CH2M to assume responsibility for worker safety. RP 1672, 1717-18. On the contrary, the City retained Don Schaechtel, a certified safety expert, to consult with plant management on safety issues, to review safety management practices, and to monitor employee-safety-regulation compliance. RP 1659-60, 1663; Ex 518.

The Agreement itself explicitly stated that CH2M's presence or duties on site did not make it responsible for the City's health and safety duties (Ex 1, Ex I):[19]

> The presence or duties of Consultant's personnel at a construction site, whether as on site representative or otherwise, do not make Consultant or Consultant's personnel in any way responsible for those duties that belong to the Agency . . . and do not relieve . . . any . . . entity of their obligations, duties, and responsibilities, including . . . any health and safety precautions required by such construction work.

The Agreement also provided that CH2M had no authority to control City employees in connection with their work or to impose any health and safety requirements on those employees (*id.*):

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[19] Exhibit I to the contract is attached as Appendix F.

> Consultant and Consultant's personnel have no authority to exercise any control over any . . . entity or their employees in connection with their work or [any] health or safety precautions and have no duty for inspecting, noting, observing, correcting, or reporting on health or safety deficiencies of the . . . entity or any other persons at the site except Consultant's own personnel.

2. The City never asked these design professionals to provide consulting services regarding plant safety, to review existing operating procedures, or to train its operators.

The scope of CH2M's engineering services set out in the original Agreement included no work relating to the digesters or any on-call services relating to plant operations. *See, e.g.*, RP 1722. Over the course of the ten years, the City and CH2M agreed to Work Modifications, reflecting changes or additions to CH2M's scope of work. RP 1403. Work Modification 7 (entered March 11, 2003) added as "Additional Services" a line item, "'On call' assistance with plant operations." Ex 520, ¶ 6, bullet 1 (attached as Appendix G); CP 3110 (F/F 15, 16).

Mr. Pelton, as Plant Superintendent and Head of Operations, was ultimately in charge of deciding whether to solicit CH2M's "on-call" assistance. RP 1405-06, 1645-46. If the City sought help with an operational issue, Mr. Pelton or one of his managers typically raised the issue at a weekly meeting with CH2M, and the request was documented in a "Change Management" document and

incorporated into a Work Modification. RP 1733. These tasks were usually formally incorporated into the contract by way of a City Council-approved contract amendment. RP 1406.

Mr. Pelton testified that he never sought CH2M's "on-call" assistance to evaluate plant safety issues or to evaluate or modify existing standard operating procedures (SOPs). RP 1659, 1682. Instead, he either hired other consultants not affiliated with CH2M to do this work (RP 1663-65, 1667; Ex 519) or relied on operators at the plant to draft the operating manual and SOPs (RP 1656). Mr. Pelton never asked CH2M to prepare, review or alter the operating manual. RP 1651, 1656-57.

Mr. Gavin, as Operations Supervisor, was responsible for training the operators on operational changes. RP 575, 1652. CH2M was never in charge of training any operators on operational changes made by plant management. RP 1652-53.

In March 2004, the City asked CH2M to design an upgrade to the digester heating and recirculation system. Ex 520; Ex 521, p. 14; Ex 523, CP 3110 (F/F 15). According to Superintendent Pelton, the scope of services for this project was limited to designing new recirculation pumps and upgrading the controls associated with this system. RP 1123-24, 1678-79. It did not include the design or

modification of existing sludge transfer piping or valving. *Id.* Mr. Irving participated in a walk-through of the digester system (CP 3111 (F/F 20)) but he did not learn sludge-transfer valving procedures, as CH2M's assignment had no sludge transfer component. RP 1724, 1727.

CH2M recommended a conceptual design for a new steam injection heating system, separate from the existing one. RP 1725-26; CP 3111 (F/F 21). CH2M also recommended installing new pumps to handle both recirculation and transfers. RP 1726. The City approved CH2M's recommendations and authorized it to begin the final engineering design. RP 1727. CH2M had completed only 50% of this engineering-design work when the accident occurred on May 10, 2004. RP 1727; CP 3111 (F/F 18).

3. The plaintiffs' theory was that when the City asked the design professionals to brainstorm about an interim fix for a discrete digester-heating problem, they suggested separating the flows of raw and recirculating sludge, a suggestion that then obligated the design professionals to insure the safety of City employees by providing a written analysis.

In the spring of 2004, several digester operational problems arose at the same time. The plant experienced several "foaming events," where foam floating on top of the sludge inside the digesters was drawn up into the PRVs and gas piping at the top of

the digesters. RP 289-91. Foam in the PRVs presented a serious problem because they were not designed to handle liquids. RP 302-03. On March 18, 2004, to prevent such foaming events, Mr. King instructed operators to keep sludge levels in the digesters below 28 feet. RP 387; 862-63; Ex 528. Mr. Gavin distributed a written memo explaining this mandate to the operators. Ex 528.

At around the same time, two digesters became "sick" or upset and were not digesting waste properly. RP 1524-25, Ex 71, p. 51. The sludge, which was supposed to have no greater than a 3.5 percent solid content, had become too thick to flow through the heaters properly, causing temperatures to drop. RP 515, 528, 1985. CH2M did not cause this problem. RP 1985-86. Rather, operators reported that low sludge temperatures were related to problems with old recirculation pumps. RP 1528. The City's piping system was configured such that the warmer recirculating sludge and the colder raw sludge from the GBTs returned to the digesters through the same pipe (the digester feed line). *See, e.g.*, Ex 591, slide 1.[20] But the raw sludge feed flowed at a higher pressure than

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[20] Exhibit 591 is attached as Appendix H. Supervisors King and Gavin agreed that these diagrams accurately depict a simplified version of the piping configuration in 2004. RP 611-12, 1524 (mentioning Ex 593, but discussing Ex 591), 1527.

the recirculated sludge, so the recirculation pumps and the digester feed pumps were working against each other. RP 1527-28, 1677; CP 3111 (F/F 23).

Before the new digester heating designs mentioned above were complete, the City decided to take interim steps to deal with these pump conflicts. On April 28, 2004, CH2M held a design meeting, during which Mr. Irving noted in the meeting minutes (under a "**Coordination**" heading), "[i]nterim city measures to survive winter; piping mods will be done so digester recirc and digester feed do not go through same pipe to enter digester." RP 1729; Ex 16; CP 3112 (F/F 25). This note indicates that the City had notified Mr. Irving of its plan to make some piping changes and asked him to coordinate this change with his design team in case the piping changes affected CH2M's ongoing heating-and-recirculation design. RP 543, 1731. But the plant managers unanimously agreed that they never asked CH2M to design any of these piping modifications. RP 1124, 1988-89, 1991, 1552.

On the morning of May 3, 2004, Mr. Pelton asked Mr. Irving and CH2M senior-technologist David Reynolds to attend a plant supervisors' meeting to discuss the digester heating problems. RP 364, 1678, 1833; Ex 18. Mr. Pelton wanted them all to brainstorm

ways of eliminating the pump conflict. RP 1677-78. Mr. Reynolds was alarmed to learn that the plant had allowed the sludge to exceed 3.5 percent solids. RP 1836-38. Over lunch, he calculated how long it would take to reduce the total percent solids through dilution and to raise the temperature to 100° F. RP 1838-39; Ex 19, pp. 2-4. When the group reconvened that afternoon, the plant managers and Mr. Reynolds discussed a possible sludge dilution and mixing schedule, which Mr. Irving documented in hand-written notes. RP 515, 529-30; Ex 19.

4. But the City rejected (a) the design professionals' specific suggestion to insert a valve to separate the flows, and (b) their offer of assistance with the interim fix, because City employees already knew the valving system better than the design professionals did.

Another issue (at both morning and afternoon meetings on May 3rd) was whether the plant could separate the recirculating sludge from the raw-sludge feed to eliminate the pump conflict. RP 1110-1111, 1528-29, 1987-88. Operators were drawing sludge out of the digesters through two "draw pipes" at the base of each digester. RP 609. These pipes (and a third that was not in use on D3) joined together at a "common header." RP 610. Mr. Irving suggested that separation might be achieved by installing a valve in the common header between two of the draw-off pipes, and re-

routing the recirculating sludge back to the digester through one of the draw-off pipes. RP 612, 1529-30, 1735, 1842-43.

This brainstorming suggestion would ultimately become the crux of the plaintiffs' theory that CH2M caused the dome collapse by not doing a written analysis of its "downstream" consequences. Mr. Irving may have looked at the piping and pointed out a possible location for the valve, but he does not recall. RP 516-519, 532, 1735-36, 1817; CP 1880-81. According to plaintiff Dan Evans, Mr. King talked with several mechanics and told them that "they" (by which Mr. Evans assumed King meant CH2M) wanted to install a valve in the common header. RP 1081, 1089. Someone in the room – perhaps even Evans himself – suggested that they use a skillet instead of a valve. RP 1081-82; CP 3113 (F/F 32). Mr. King liked this idea better than a valve because the City eventually intended to replace these pipes, so there was no need to incur the greater expense of manufacturing and installing a valve. RP 1531. Mr. King decided that the City could fabricate and install the skillets without CH2M's help. RP 378-79, 1530-33, 1553, 1627.

Messrs. King and Irving concluded that there was a possible way to recirculate sludge back into the digesters through a pipeline other than the raw feed line. RP 1529-30, 1735. In meeting

minutes of the May 3 morning session, under the heading "**Change Management**," Mr. Irving made the notation "Digester Recirc piping reroute." Ex 18, p.2; CP 3112 (F/F 27). Mr. Irving's notes from the afternoon meeting stated (Ex 19):

> 5/4 & 5/5 – Add skillet plates in digester recirc. piping to separate Digester Feed entering Digesters from recirculated biosolids entering Digester.

The City never asked CH2M to design the skillets or any piping modifications for this process. RP 535-36, 567, 1124, 1552, 1675, 1678-79, 1682, 1733-34, 1739. Mr. Pelton limited the scope of CH2M's services on this issue to no more than brainstorming. RP 1123-24, 1678, 1704-05. Mr. Coster, then the Laboratory Supervisor, agreed with Mr. Pelton that CH2M's services were so limited. RP 1981, 1988-89. There is no evidence to the contrary. *But see, e.g.*, CP 3114-16 (F/F 38, 39, 40-44).

The City also did not ask CH2M to train the operators on any impact the skillets might have on valving transfers or to review the training manual's digester-sludge-transfer SOPs. RP 1124, 1657, 1679. Messrs. Pelton and Coster felt that it was beyond CH2M's scope of services to do these things because the plant operations staff had much greater experience than CH2M engineers in valving sludge transfers. RP 1657, 1988-89, 1991, 1994-95. Therefore, at

the conclusion of the May 3 meetings, Mr. Pelton expected Mr. Gavin – not CH2M – to train the Class III operators, and expected them to train their crews. RP 1124, 1655, 1657, 1678, 1680, 1705. Mr. Pelton did not ask CH2M to evaluate any valving configurations after the City installed the skillets because he relied on Mr. King to do that. RP 1126, 1654, 1677, 1679-82, 1739-40.

Indeed, it is undisputed that Mr. Irving asked Mr. King whether the City needed CH2M's help, and Mr. King declined the offer because he already knew the system that he had helped design and had been operating for over two decades. RP 530, 535, 1627, 1735-36. It was not CH2M's role to direct Mr. King in any operational task. RP 1623-24, 1987. CH2M worked "on call," so if the City needed the firm's services, it had only to ask. RP 566.

5. The plaintiffs' experts nonetheless opined that the design professionals had to give the City unwanted advice and that failing to write down the unwanted advice proximately caused the dome collapse; the trial court accepted these opinions, despite the evidence that the skillets had no effect on valving transfers and that operators had long known the risks of error.

Despite the uniform City insistence that it never asked CH2M to design, install or analyze the effect of the skillets, never asked CH2M to train the City's operators in any such effects, and even rejected CH2M's specific offer of help, the plaintiffs' experts

nonetheless opined that CH2M's standard of care as an engineer required it to do the analysis anyway, in writing. *See, e.g.*, RP 657-58, 749, 753, 1484-85. Two experts even opined that the absence of a writing caused the operator confusion that caused the dome collapse. *E.g.*, RP 745-48, 1451-52. The trial court accepted these opinions. *See, e.g.*, App. A (F/F 38, 39, 44, 57, 58, 67).

But the evidence at trial simply belies these opinions. The trial court failed to make a specific finding that the skillets actually changed the transfer-valving configuration for D3, though some of its findings seem to so imply. Mr. King testified that one of his priorities in deciding whether and where to install the skillets was to find the simplest way for the operators to transfer sludge without significant valving changes. RP 382, 1530. He concluded that the skillets made neither a "significant operational change" nor a "design change to piping." RP 382, 1530, 1552. Operators would still open and close just one valve, just a different valve. RP 1551-52. Mr. King "found this to be a fairly simple change in the valving that shouldn't confuse anybody."[21] RP 1553.

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[21] Plaintiffs' expert Brugger testified that Mr. King's evaluation of the valving after the skillets was both correct and also the kind of evaluation that he thought CH2M should have made. RP 382-83, 385-87.

CH2M's wastewater engineering expert, Craig Chambers, evaluated the engineering drawings of the plant and testified (using a computer animation)[22] that the skillets made no change in the valving configuration for a sludge transfer. RP 1880-85; App. I. Mr. Chambers demonstrated that to stop recirculation and begin a transfer pre-skillet, an operator would open a valve on the transfer line (labeled No. 3265 on the drawings – "the transfer valve") and would close a valve on the recirculation line (labeled No. 3258 – "the recirculation valve"). *Id.* To perform the same operation post-skillet, the operator would open the same transfer valve, just as he had done before, but now would close a different valve on the recirculation line (labeled No. 3259). RP 1949; App. I.

While the valve used to stop recirculation was different, the skillets caused no change in the valving *configuration* on the transfer line: the valves on the transfer line were in the same configuration before and after the skillets. RP 339, 1886, 1948-49. While one recirculation valve changed, Mr. Chambers (like Mr. King) found that change insignificant. RP 1543-53, 1886, 1950-53.

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[22] Attached as Appendix I are three stills from the animation shown to the judge (Ex 582, admitted for illustrative purposes), labeled to assist the Court in following the testimony discussed in the text.

Mr. Chambers also spoke to the alternative procedure for transferring sludge out of D3, involving the three-way valve that Mr. Fletcher used on May 10. RP 1893. Mr. Hetnar confirmed that this alternative method could be used both before and after the skillet installation, if the operators chose to do so. RP 976. While operators had a choice of using either the recirculation valve or the three-way valve to start or stop recirculation, that operational choice was best left to the operators. RP 1893. That is best because the entire piping system was designed for maximum flexibility (RP 216, 336, 2087, 2155-56, 2196) requiring the operators to always double-check and be sure, as the operations manual warned:

> **CAUTION: Because of the complexity of the digester sludge lines and valving, it is easy to, inadvertently, transfer a large amount of sludge to some place other than intended in a short period of time or to cause damage to equipment or danger to personnel. Also, be aware that piping color codes may change when passing through the ceiling/floor from the 01 to 17 levels. Therefore, be scrupulously careful in these operations. BE SURE! TRACE LINES! CHECK IT OUT AND THEN DOUBLE-CHECK! IF THERE IS ANY DOUBT, CHECK WITH THE CHIEF OPERATOR BEFORE PROCEEDING!**

Ex 508, DT-20 (emphases in original). Indeed, this manual warned operators, in bold lettering, not to ever attempt any procedure for which they have not been trained (Ex 508, DT-3):

> **WARNING: Because of the complexity of the DT area and its systems, there is the danger that improper operation could result in injury to personnel or damage to the plant. Operators must not attempt any procedure or operation for which they have not been trained and/or cleared to do by the Chief Operator or Senior Operator. Any unusual operation or change from normal procedure – as described in this chapter – MUST be approved by the Chief Operator before proceeding.**

Moreover, the operators were also trained to either place valves back into their normal positions or walk their shift replacements through any unusual vavling (*id.*, DT-4, emphasis original):

> **CAUTION: If any unusual valving has been done to any system, during a shift, the valves must be put back to the original configuration before the end of the shift OR the DT Operator must make a trip with his relief to point out (actually go there and show) what changes have been made and explain the reasons for the changes.**

As discussed above and below, the May 10 operators ignored all of these written warnings on that tragic day.

ARGUMENT

A. Standard of Review.

The issues in this appeal pertain to immunity, duty and proximate cause. Interpretation of the immunity statute is a question of law, reviewed *de novo*. ***City of Pasco v. Public Employment Relations Comm'n***, 119 Wn.2d 504, 507, 833 P.2d 381 (1992); ***Inland Empire Distrib. Sys., Inc. v. Util. & Transp. Comm'n***, 112 Wn.2d 278, 282, 770 P.2d 624 (1989). Whether a

duty exists also is a question of law, reviewed *de novo*. ***Folsom v. Burger King***, 135 Wn.2d 658, 671, 958 P.2d 301 (1998); ***Schooley v. Pinch's Deli Mkt., Inc.***, 134 Wn.2d 468, 474, 951 P.2d 749 (1998); ***Burg v. Shannon & Wilson***, 110 Wn. App. 798, 804, 43 P.3d 526 (2002). Proximate cause involves cause in fact, generally a question of fact reviewed for substantial evidence, and legal cause, a legal question reviewed *de novo*. *See, e.g.*, ***Kim v. Budget Rent A Car Sys., Inc.***, 143 Wn.2d 190, 203-04, 15 P.3d 1283 (2001). Findings are reviewed for substantial evidence. *See, e.g.*, ***Fred Hutchinson Cancer Research Ctr. v. Holman***, 107 Wn.2d 693, 712, 732 P.2d 974 (1987).

B. The design professional immunity statute bars these plaintiffs' claims.

Prior to trial, the trial court denied summary judgment motions on immunity under the design professional immunity statute, RCW 51.24.035, ultimately ruling that questions of fact existed. CP 3050. After trial, the trial court entered only two conclusory "findings":

> 94. At all pertinent times prior to and on May 10, 2004, the area of the plant where the skillets were installed was not a construction project nor a construction site within the meaning of RCW 51.24.035(1).
>
> 95. The Irving proposal to separate sludge flows referenced above in these Findings constitutes negligent preparation

> of a design plan within the meaning of RCW 51.24.035(2).

App. A, CP 3128. As further discussed below, these findings are wholly incorrect and unsupported legal conclusions.

The design professional immunity statute provides design professionals with immunity from suits by injured workers:

> Notwithstanding RCW 51.24.030(1), the injured worker or beneficiary may not seek damages against [1] a design professional [2] who is a third person and who has been retained to perform professional services on a construction project, or any employee of a design professional who is assisting or representing the design professional in the performance of professional services on the site of the construction project, [3] unless responsibility for safety practices is specifically assumed by contract, the provisions of which were mutually negotiated, or [4] the design professional actually exercised control over that portion of the premises where the worker was injured.

RCW 51.24.035(1) (bracketed enumeration added). Analyzing this provision as enumerated, the statute bars plaintiffs from suing CH2M and Mr. Irving for four reasons:

> [1] CH2M and Mr. Irving are design professionals;
>
> [2] these design professionals are each a "third person [*vis a vis* these workers] retained to perform professional services on a construction project";
>
> [3] these design professionals did not expressly assume responsibility for safety practices; and
>
> [4] these design professionals did not actually exercise control over that portion of the premises where the workers were injured.

Point [1] is self evident. On [2], the City retained these design professionals under a standard consulting agreement to "provide overall program management and preliminary and conceptual engineering service for the City's 10 year treatment plant Capital Improvement Project." App. E (Ex 1, pp. 1-2). The "Scope of Services" provides that the "City . . . is embarking on a comprehensive, integrated program of capital improvements for its wastewater conveyance and treatment facilities." App. E (Ex 1, Ex B). Specifically, these design professionals were to manage planning, design and construction of this 10-year project (*id.* at Ex B, p. 2; emphasis added):

> The overall objective of the PMO [Project Management Office] is to coordinate and direct all planning, design, and ***construction*** activities to ensure that the SAWTP [Spokane Advanced Wastewater Treatment Plant] improvements are completed within the City's established budget and time frame while simultaneously maintaining continuous, ongoing operation of the plant in compliance with its National Pollutant Discharge Elimination System (NPDES) permit.

Thus, CH2M and Mr. Irving were indisputably third persons retained to perform professional services on a construction project.

On [3] above, the contract did not expressly allocate plant safety to these design professionals, but rather specifically precluded such an allocation (App. F, emphasis added):

> The presence or duties of Consultant's personnel at a construction site, whether as on site representative or otherwise, do not make Consultant or Consultant's personnel in any way responsible for those duties that belong to the Agency . . . and do not relieve . . . any . . . entity of their obligations, duties, and responsibilities, **including** ... **any health and safety precautions** required by such construction work.

Similarly, as to [4] above, the contract expressly precluded these design professionals from having any authority or control or safety duties on any portion of the site as to the City's workers (*id.*):

> Consultant and Consultant's personnel have no authority to exercise any control over any . . . entity or their employees in connection with their work or [any] health or safety precautions and have no duty for inspecting, noting, observing, correcting, or reporting on health or safety deficiencies of the . . . entity or any other persons at the site except Consultant's own personnel.

Not only did the contract expressly bar such authority and control, but the testimony of the City's supervisory staff was uniform: these design professionals had no authority or control over operations or safety at the plant, and the City hired a separate safety expert to handle that aspect of operations. *See, e.g.*, RP 1400, 1659-60, 1663, 1683, 1717; Ex 518.

In sum, the design professional immunity statute unquestionably applies here. The plaintiffs nonetheless asserted that the precise location where the City inserted the skillets was not a "construction site" for purposes of this statute. But the statute

refers to design professionals "retained to perform professional services on a construction ***project***." RCW 51.24.035(1) (emphasis added). The City retained these design professionals to provide their services for a series of construction projects lasting ten years.

Moreover, contrary to the trial court's "Finding" 94, nothing in this statute suggests that where, as here, construction is being performed as part of such an ongoing 10-year project, but an injury occurs in a portion of the project at which construction is not immediately ongoing, the Legislature intended for this immunity to disappear. It is undisputed that many places around the plant (a/k/a the construction project site) were under construction. *See, e.g.*, RP 564. The Legislature did not exhibit any intent that courts should interpret away this immunity by applying a tape measure to check how near or far from actual construction work the design professional or the worker happened to be at any given time in the course of a 10-year construction project. The statute refers to a "construction project" – not to construction alone.[23] The plaintiffs'

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[23] The most apt definition for "project" in this context comes from WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 1813 (1993): "a vast enterprise usu. sponsored and financed by a government <demand made for setting up public work ~*s* . . . > <the ~ , as authorized by Congress . . . provided for a ten-year expenditure of $88 million . . . .>"

and trial court's statutory interpretations are unreasonable and contrary to the plain language of the statute. This Court should not so limit this legislative immunity, which does nothing more than provide parity with the City's immunity.

Finding 95 concerns the immunity statute's exception for negligent preparation of design plans and specifications:

> The immunity provided by this section does not apply to the negligent preparation of design plans and specifications.

RCW 51.24.035(2). Here, the entire theory of the plaintiffs' case was that CH2M and Mr. Irving did not prepare design plans and specifications, which is uncontradicted in this record. Thus, under the plain and unambiguous language of this statute, this exception does not apply. Courts should not expand such a narrow exception by adding, "or to a failure to prepare unwanted design plans and specifications." *See, e.g.*, ***Caritas Servs., Inc. v. DSHS***, 123 Wn.2d 391, 409, 869 P.2d 28 (1994) (citing ***Vita Foods Prods., Inc. v. State***, 91 Wn.2d 132, 587 P.2d 535 (1978)).

Moreover, Finding 95 is unsupported by substantial evidence. The "Irving proposal to separate sludge flows" (F/F 95) was sound engineering that worked – it cured the digesters' "sickness." RP 1622, 1739, 1894-95, 1989-90, 2113. It is

undisputed that the City rejected Mr. Irving's suggestion of a valve to separate the sludge flows, and instead chose to use a skillet. The City's supervisors unequivocally testified that they were the final arbiters of the scope of these design professionals' services. *See, e.g.*, RP 311, 1400, 1405-06, 1646-48, 1650-52, 1656-58, 1679. Mr. Pelton testified that the scope of these services was a brainstorming session – "there was no design set up, or no special contract with them to install skillets or engineer skillets." RP 1123-24, 1678, 1704-05. Mr. Coster also affirmed that their role was simply to help the City trouble-shoot the digester problem. RP 1988. The City did not ask CH2M or Mr. Irving to design any piping modifications. RP 1124, 1675, 1678-79.

In making his decision on the skillets, Mr. Pelton relied on Mr. King's superior knowledge of the piping valving. RP 1126, 1679-81. Mr. King never asked the design professionals for help on the skillets or valving. RP 567, 1521-22, 1530, 1624-27. He even rejected Mr. Irving's offer of help. RP 530, 535, 1735-36. Mr. Irving did not tell the City how to install the skillets, was not asked to do any design work on the skillets, and was not empowered to do any such work. RP 535-36, 567, 1532, 1552, 1623-24, 1739.

The plaintiffs' experts never testified that Mr. Irving had to prepare a design plan or specifications. Rather, they said his "proposal" was a design, and then made some rather vague and non-specific arguments about preparing a written analysis of the downstream effects of separating the flows. *See, e.g.*, RP 661, 1447-49. But such analysis was beyond the scope of the services requested or permitted by the City.

In contrast, the appellants' experts testified – consistent with all of the operators' and supervisors' testimony – that not only did these design professionals have no duty to instruct the City's operators, but the single recirculation valve change was "a piece of cake" for them. RP 2119. Frankly, Mr. Irving would have had to consult with the operators in order to make a relevant determination about the valving, if he had been asked to do that. RP 2119. But over many years in wastewater engineering, Mr. Chambers had never seen any wastewater engineer do a "hazard analysis" at any treatment plant following a brainstorming session. RP 1894.

This Court's purpose in interpreting this statute is to give effect to the Legislature's intent. *See, e.g.*, ***Burns v. City of Seattle***, 161 Wn.2d 129, 140, 164 P.3d 475 (2007). The unambiguous intent here is to provide immunity to design

professionals unless they negligently prepare design plans and specifications. That did not happen here. Like the City, these design professionals should be and are immune from liability.

C. These design professionals owed these plaintiffs no duty to train their co-workers, or them, or to prevent the City from harming its own employees.

Assuming *arguendo* that these defendants are not immune, the plaintiffs still had the burden of establishing a legal duty. ***Burg***, 110 Wn. App. at 804. If CH2M and Mr. Irving owed these plaintiffs no legal duty, then these plaintiffs have no right to recover from them. ***Folsom***, 135 Wn.2d 658 at 671; ***Estate of Kelly v. Falin***, 127 Wn.2d 31, 36, 896 P.2d 1245 (1995).

The trouble here is that the trial court skipped over the duty question and went directly to the standard of care – both in his Memorandum Opinion (M.O.), and in his Findings (which are not supposed to be legal conclusions in any event). *See, e.g.*, CP 3040-43 (M.O.), 3108-14 (F/F 5-39). In the M.O., which is incorporated in the Findings (CP 3107), the court ruled:

> The duty owed to Plaintiffs, if any, is found in the standard of care of a professional engineer in Defendant's contract with the City, Exhibit I to PI Exhibit 1; "Standard of Care", PI Exhibit 4, #6 "On Call Assistance" with plant operations; and PI Exhibit #3 Scope of Services for Digester Recirculation, Pumping, Heating and Mixing Systems, together with RCW 18.43 et seq., and 196 WAC-27A &29. [*sic*]

CP 3041. This long sentence is very confusing, and the first part of it simply makes no sense.

Duty is not "found" in a standard of care. Rather, duties may arise from common law, contracts, or statutes. *E.g.*, ***Rogerson Hiller Corp. v. Port of Port Angeles***, 96 Wn. App. 918, 925, 982 P.2d 131 (1999), *rev. denied*, 140 Wn.2d 1010 (2000). But contractual duties may not be the basis for recovery of noneconomic damages. *See, e.g.*, ***Alejandre v. Bull***, 159 Wn.2d 674, 681-82, 153 P.3d 864 (2007).[24] To the extent that the trial court meant to award noneconomic damages for a breach of contract, it erred. But the legal question here is whether these defendants owe these plaintiffs a duty, not simply whether a professional engineer has a standard of care.

As discussed above, this contract – for a ten-year project from conceptual design to fully constructed – expressly states that (a) CH2M's mere presence on site does not make it responsible for the City's duties toward its workers and safety, and (b) CH2M has

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[24] Of course, one can assume a duty under a contract whose breach may cause recoverable tort damages, but only as between the contracting parties or third-party beneficiaries, none of which happened here. It is undisputed that "Plaintiffs did not assert a [breach of contract] cause of action against CH2M and Irving." CP 3107. In any event, the contract says that CH2M had no authority or control over the worksite.

no control over the worksite. App. F. Washington law is very clear that employers (like the City) may not delegate their worksite-safety responsibilities to others who have no control over their worksite. *See generally, e.g.*, ***Stute v. P.B.M.C., Inc.***, 114 Wn.2d 454, 788 P.2d 545 (1990), and its progeny. The trial court erred in assigning the City's safety duties to CH2M and Mr. Irving.

The trial court essentially found that CH2M had to analyze the skillets' effects in writing because Work Modification 7 said the consultants would provide on-call services. *See* CP 3114-16; App. G. But the evidence is uncontradicted that no one at the City considered a written assessment of the skillets within the scope of the consultants' work. RP 378-79, 535-36, 567, 1123-24, 1552, 1623-24, 1675, 1678-79, 1683, 1704-05, 1739, 1957, 1987-88. Yet the trial court effectively delegated the City's duties to the consultants – something no one at the City agreed had happened – and then held them liable for breaching the City's duty to keep its employees safe. Again, this is simply wrong on the law.

As noted above, the trial court engaged in tautology when it equated the existence of a duty with the existence of a standard of care. Such circular reasoning is always improper, but even if were plausible, there is no way that CH2M could have met this alleged

duty without first consulting the operators. *E.g.*, RP 2119. The operators certainly knew more about this piping and valving than the engineers. RP 530, 535, 567, 609, 793-94, 825, 845-46, 849-50, 857-58, 873-74, 904-06, 969-70, 972, 978-80, 993, 1048-49, 1252, 1553, 1624-27, 1657, 1680, 1705, 1778-80. In order to meet the alleged duty the plaintiffs propose, Mr. Irving would have had to ask the operators how to do the valving, walk through it with them, write it down, and give back to them what they told him. *E.g.*, 2119. Indeed, because this piping system was so redundant and flexible – permitting the operators to chose any one of many ways to valve a particular transfer (RP 216, 336, 2087, 2155-56, 2196) – it was simply impossible to just "write down" how to make any given transfer – rather, the operators must always trace lines. Ex 508, p. DT-20. Thus, the engineers would write only, "Be sure! Trace lines! . . . double-check." RP 358. A tautological "duty" is nothing but a merry-go-round of legal error.

The trial court also bases its duty conclusion on RCW 18.43 and WAC 196-27A & 29. CP 3041. The appellate court has held that the professional engineering standards in RCW 18.43 and WAC 196-27A do not create a legal duty toward individuals other than a client or employer absent a special relationship. ***Burg***, 110

Wn. App. at 804. General pronouncements of engineering standards of care are insufficient to impose a duty (*id.*):

> To sustain a negligence action against an individual, "the duty must be one owed to the injured plaintiff, and not one owed to the public in general." ***Taylor v. Stevens County***, 111 Wn.2d 159, 163, 759 P.2d 447 (1988). The statute and regulations cited by appellants indicate that professional engineers owe duties to the public, to their clients and to their employers. Except for Burg, appellants were not clients or employers of S&W. Appellants offer no other evidence of a special relationship that would invoke a duty under the statute or regulations. The broad pronouncements that engineers owe a general duty to the public welfare alone do not establish that engineers owe a duty to any identifiable group or individual. Appellants have not met their burden of articulating how these statutes and regulations impose a duty on S&W specific to them individually.

The trial court did not find – because there is no evidence – that CH2M and Mr. Irving had any "special relationship" with these plaintiffs. The absence of a finding on this crucial issue means that the plaintiffs failed to meet their burden of proof. *See, e.g.*, ***State v. Armenta***, 134 Wn.2d 1, 14, 948 P.2d 1280 (1997). ***Burg*** simply precludes the imposition of a duty in these circumstances.

Similarly, the RESTATEMENT (SECOND) OF TORTS § 314 provides that mere knowledge of a possible danger is not enough:

> The fact that the actor realizes or should realize that action on his part is necessary for another's aid or protection does not of itself impose upon him a duty to take such action.

And under § 315, CH2M and Mr. Irving had no duty to stop the City from harming its own employees:

> There is no duty so to control the conduct of a third person as to prevent him from causing physical harm to another unless:
>
> (a) a special relation exists between the actor and the third person which imposes a duty upon the actor to control the third person's conduct, or
>
> (b) a special relation exists between the actor and the [plaintiff] which gives to the [plaintiff] a right to protection.

See also, e.g., ***Hertog v. City of Seattle***, 138 Wn.2d 265, 275-76, 979 P.2d 400 (1999); ***Taylor***, 111 Wn.2d at 163. Simply put, these engineers had no duty to prevent the City's negligence and recklessness toward its own employees.

Courts in other jurisdictions agree that design professionals have no duty to protect their clients' employees from injury when they have no control over the employees' work activities. *See, e.g.*, ***Peck v. Horrocks Eng'rs***, 106 F.3d 949, 952 (10th Cir. 1997) ("As a general rule, an engineer with construction inspection responsibility over a construction project owes no duty to an independent contractor's employees"); ***Hobson v. Waggoner Eng., Inc.***, 878 So.2d 68 (Miss. Ct. App. 2003) (discussed below); ***Herczeg v. Hampton Twp. Mun. Auth.***, 766 A.2d 866 (Pa. Super. Ct. 2001) (engineer's knowledge of employer's unsafe practices

insufficient to impose tort duty); ***Jones v. James Reeves Contractors, Inc.***, 701 So. 2d 774 (Miss. 1997) ("Unless the architect has undertaken by conduct or contract to supervise a construction project, he is under no duty to notify or warn workers or employees of the contractor or subcontractor of hazardous conditions on the construction site").

Hobson, *supra*, is probably the most apposite here. There, the engineer designed the expansion of a wastewater treatment plant at which a worker was found drowned in an artificial lagoon. The administratrix alleged that the engineer owed the decedent a duty to design a safe facility and to warn him of dangers. The ***Hobson*** court held that the administratrix failed to show that the engineer owed a duty to the decedent because, under the applicable contract, "as in most construction projects, the general contractor alone had full and absolute control over the work site and the means and methods of construction." 878 So.2d at 76.

Indeed, where, as here, the potential danger is open and obvious, a professional engineer has no duty under Washington law to warn workers of a potential known safety hazard. ***Baugh v. Honda Motor Co.***, 107 Wn.2d 127, 139, 727 P.2d 655 (1986) (danger of riding ATV on street without helmet is obvious); ***Zamora***

Mobil Oil Co., 104 Wn.2d 199, 205, 704 P.2d 584 (1985) (risk of explosion from gas leak on propane tank obvious); ***Seiber v. Poulsbo Marine Ctr., Inc.***, 136 Wn. App. 731, 740, 150 P.3d 633 (2007) (danger presented to pedestrian of merchandise stacked near stairs was obvious; no duty to warn). The danger of an overflow in D3 was obvious. The plaintiffs established no duty.

The plaintiffs misstated several cases to the trial court in an effort to create a duty here. See CP 2959-60. They claimed that,

> [i]n ***Seattle Western Industries, Inc. v. David A. Mowat Co.***, 110 Wn.2d 1, 750 P.2d 245 (1988), the Supreme Court held that an engineer is liable for negligence if the engineer's lack of professional knowledge and skill, or the negligent failure to exercise his professional knowledge and skill, is the proximate cause of damages. 110 Wn.2d at 8.

Id. ***Seattle Western*** says no such thing. Rather, the Court simply quotes a jury instruction that it had once approved in the past, but finds no error in the trial court refusing to give that instruction. This is in no sense the holding claimed by the plaintiffs. The plaintiffs also relied on a case against a municipality to state the standard of care of an engineer, but the case has no relevance here. CP 2960 (citing ***Wells v. Vancouver***, 77 Wn.2d 800, 467 P.2d 292 (1970)).

More relevant is this Court's decision in ***Riggins v. Bechtel Power Corp.***, 44 Wn. App. 244, 722 P.2d 819, *rev. denied*, 107

Wn.2d 1003 (1986). There, plaintiff (who was an employee of one of 26 prime contractors at the Hanford site) sued Bechtel (a consulting engineering firm) when she tripped and fell over a partially exposed rebar near her employer's administrative trailer. 44 Wn. App. at 246-47. Neither she nor her employer had any authority to remove the rebar. *Id.* at 247 n.1. And by contract, Bechtel was specifically responsible for approving the location and design of all temporary facilities, including structures such as that used by the plaintiff's employer, and was to "[d]evelop and execute the site safety and fire protection program," which "supplement[ed] the contractor's programs . . . and provide[d] a unified assurance . . . that safety and health issues [were] dealt with in a positive manner" on the project. 44 Wn. App. at 246.

Thus, the owner of the work site (WPPSS) had specifically delegated to Bechtel the duty to supervise and execute the safety plan, giving it the authority to "stop any operations of the contractor' until violations of the safety plan were corrected." *Id.* at 249. Naturally, this Court therefore held that when "Bechtel assumed these duties, it stood in the shoes of WPPSS with respect to the safety of any . . . employee on the job site." *Id.* Accordingly, the Court held "that the extent of supervision required of Bechtel in its

contract with WPPSS, and the frequency and type of inspection it was required to conduct, present factual issues which only the jury could resolve from its review of the contract, exhibits and testimony presented." *Id.* at 252 (*citing* ***Loyland v. Stone & Webster Eng'g Corp.***, 9 Wn. App. 682, 687, 514 P.2d 184 (1973), *rev. denied*, 83 Wn.2d 1007 (1974)).

In ***Loyland***, a supervising engineer assumed the duty to "direct and administer" construction work, including prescribing "the safety measures with which the contractor was to comply." ***Riggins*** at 250. Therefore, the "court concluded the extent of supervision required of the engineers in its contract with the district, and the frequency and type of inspection it required was a question for the jury." *Id.* "Of course, the key test for the duty of reasonable care is more an evaluation of contractual duties and the special skills and knowledge of the actor." ***Riggins*** at 250 n.5.

A case distinguished in ***Riggins***, 44 Wn. App. at 252, is much more apposite here: ***Porter v. Stevens, Thompson & Runyan, Inc.***, 24 Wn. App. 624, 602 P.2d 1192 (1979), *rev. denied*, 93 Wn.2d 1010 (1980). There, a construction worker who was injured in a ditch cave-in on a sewer construction project sought damages from the consulting engineer on the construction project,

and from the City of Walla Walla. The trial court dismissed the worker's suit on summary judgment, and the appellate court affirmed, holding that the design professional was not liable on bases very similar to those later contained in the design professional immunity statute: that a consulting engineer or architect on a project has no duty to insure safe working conditions when no such duty is specifically imposed by contract or the person does not have supervisory control over safety precautions, or actual control over the performance of the work. 24 Wn. App. at 631-32.

Riggins, ***Loyland*** and ***Porter*** make clear that a contract like the one at issue here, in which the consultants have no control over the workplace and the employer operating a functioning wastewater facility retains all duties regarding its workers' safety, cannot give rise to a duty owed to the employer's workers. Indeed, the Legislature is presumed to have been aware of (and likely codified) all of these cases when adopting the design professional immunity statute, RCW 51.24.035, in 1987. Nothing about these facts or the contract suggests that a design professional agreeing to work on a lengthy project – on condition that its presence on site will not cause it to assume the employer's duties – may be liable for breach of the un-assumed duties. The trial court erred in so ruling.

In many respects, the plaintiffs' claims are similar to those raised in ***Folsom***, *supra*. There, the estates of two employees killed at a restaurant by a former employee sued the restaurant owner and the franchisor. The plaintiffs claimed that the franchisor had a right to control and supervise operations because the franchisor issued operating guidelines and could terminate the franchise for non-compliance. In rejecting a duty of reasonable care, the Supreme Court held:

> In this case, plaintiffs have not established that Burger King retained sufficient control to expose it to liability. In order to retain sufficient control, a franchisor must retain the ability to make decisions concerning the daily operation of the franchised restaurant. The franchise agreement between Burger King and [the] franchisee expressly states that a franchisee is an independent contractor and Burger King has no control over the terms and condition of the franchisee's employees.

135 Wn.2d at 673. Here too, CH2M and Mr. Irving had no ability to make decisions concerning the daily operation of the wastewater treatment plant. The suggestion on dividing the flow was merely that, but ultimately only the plant supervisors could make the decision whether to accept that advice, install skillets instead of a valve, and either train or not train their operators on any changes. *See, e.g.*, RP 567, 1122-24, 1521-22, 1539-32, 1623-24, 1678-79, 1987-89. The contract between CH2M and the City specifically

provided that the "consultant's relation to the [City] shall be at all times as an independent contractor." App. E (Ex 1, p. 7, ¶ XIII). The plant supervisors confirmed that CH2M never assumed control over the health and safety of the City's employees. RP 1400, 1659, 1672, 1683, 1717-18.

CH2M and Mr. Irving owed these plaintiffs no duty. The trial court erred in so ruling. The judgments should be reversed.

D. The plaintiffs failed to establish proximate cause.

Proximate cause has two elements, factual causation and legal causation. ***Schooley***, 134 Wn.2d at 478. Factual causation (or "cause in fact") is the "actual" cause of an injury, "based on a physical connection between an act and an injury." *Id.* Thus, the test for cause in fact is whether the injury would have occurred "but for" the defendant's actions. *Id.* This is a question of fact unless reasonable minds cannot differ as to causation. *Id.*

Legal cause is a policy question regarding how far the consequences of a defendant's acts should extend. 134 Wn.2d at 478. This analysis turns on whether the connection between the defendant's act and an injury "is too remote or insubstantial to impose liability." *Id.* at 478-479. This depends on considerations of logic, common sense, justice, policy and precedent. *Id.* at 479. If

there are no genuine issues of material fact, then legal cause is a question of law for the Court to decide. *Id.* at 478.

1. The absence of a written analysis of the City's interim fix did not cause the dome to collapse.

As to factual causation, the plaintiffs had the burden to prove the "physical connection between an act and an injury." ***Schooley***, 134 Wn.2d at 478. That is, they had to prove that the collapse was actually caused by a failure to write down an explanation of downstream effects. The operators – who had between them over 50 years of experience in how to trace lines and valve transfers – agreed that they knew this better than the consultants. While cause in fact is frequently a pure fact question, here, the alleged causation is so implausible as to defy all reasonableness.

As an initial matter, it is undisputed that the operators stopped the sludge transfer from D2 to D3 at around 2 p.m., so the only sludge still entering D3 came in through the raw-feed pipeline. Thus, the only way the operators could overfill D3 after 2 p.m. was by failing either to fully close the electric valve on the raw-feed pipeline or to turn off the feed pumps. Plaintiffs' experts agreed that either of these actions would have stopped the flow of sludge into D3, preventing the dome collapse. RP 429-30, 1558. It also is

undisputed that both of these actions were unaffected by the skillets, so there is no causal connection between the separation of the sludge flows and the operators' failures to complete either act successfully. RP 426, 1557. All the more so, a failure to analyze the flow separation in writing could not cause the dome to collapse because the flow separation did not affect the immediate "but-for" cause – raw sludge pumping into D3 until the dome collapsed. This alone is sufficient to reverse.

Notwithstanding those indisputable facts, plaintiffs offer a complex syllogism of causation:

A. The operators were confused by the skillets, so they failed to correctly valve a transfer out of D3, causing the dome to collapse.

B. If CH2M had done a written analysis of the skillets' effect downstream, then the operators would not have been confused.

Therefore, CH2M's failure to do a written analysis caused the digester dome to collapse.

But neither of these necessary (but not alone sufficient) premises is factually supported, nor do they logically support the conclusion.[25]

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[25] This syllogism also is based on a false, if unspoken premise: that CH2M owed these plaintiffs a legal duty to analyze the skillets' effect, an installation that CH2M did not recommend and as to which the City rejected assistance. This causation analysis assumes *arguendo* that the Court first creates such a duty running to these plaintiffs.

Premise A is unsupported by the record: no operator or supervisor on duty on May 10 testified that he was confused. The operators on duty took the skillets into account, traced lines and double-checked, and believed they had set the transfer correctly. RP 849-50, 872-74, 904-06, 915-16. The operator who actually turned the three-way valve the wrong direction, Mr. Fletcher, was not confused by the skillets. RP 915-16, 919. There is no dispute that he could have turned the three-way valve the right way. Mr. Headley, the Operator III in charge, correctly acknowledged that this transfer was unaffected by the skillets. RP 806-07. Even plaintiffs' expert Brugger admitted this. RP 342. On this record, no evidence supports a factual conclusion that the operators were confused by the skillets (or the separation of sludge flows) when they turned the three-way valve the wrong way.

The plaintiffs did present three experts who made conclusory assertions that the skillets caused confusion leading to the dome collapse: Messrs. Brugger, Moncarz and Gill. *See, e.g.*, RP 190, 260-61, 736, 753, 1450-51. But conclusory surmises about ultimate issues of fact are no substitute for facts. No one even claimed to have been confused by the skillets, and the evidence shows that the skillets had no effect on either the open valve on the

raw feed line or the three-way valve on the recirculation line. No evidence supports the premise that the skillets caused confusion that caused the dome to collapse.

Premise B is that a written analysis would have prevented the operators' alleged confusion. Simply put, not writing down what the operators already knew – trace lines, be careful, make sure, because any confusion or error on your part could cause a dome collapse – did not cause the dome to collapse. The operators were the undisputed experts on making transfers. The redundancy in the system and possibility that other shifts had changed the valving absolutely required them to always trace lines and double-check. As a result, no one – least of all a non-operations consultant – could possibly write down one "correct" way to always valve a transfer. By definition, such a writing would have been wrong because the operators must always double-check the current valve settings and work back from there. The lack of written instructions could not have caused the dome to collapse.

Moreover, in order for this accident to occur, the operators had to disregard every single written instruction they ever received about valving transfers, from the manual, to the 28-foot limit for the digesters, to the notice regarding the skillets and the many

warnings to trace lines and be sure. One more writing that could only tell these operators what they already knew – trace lines, double-check, be sure! – could not have stopped this accident from happening. The plaintiffs' premise B is false.

Yet even assuming *arguendo* that both of these false premises were supportable and supported by evidence, they do not lead to the conclusion that the absence of a writing caused the dome to collapse. The City's negligence is undisputed. Equally undisputed is that two of the City's key errors – failing to stop the raw sludge flow from the GBTs and failing to turn the three-way valve the right way – were completely unaffected by the skillets (the necessary actions were the same before and after the flows were separated). Thus, any confusion about skillets could not actually cause this accident. The Court should reverse and dismiss.

2. Legal cause is too remote and insubstantial.

Even if the trial court's insupportable findings of cause in fact were sufficient, CH2M and Mr. Irving still would not be the legal cause of the plaintiffs' injuries because no substantial connection exists between their alleged inaction and these plaintiffs' injuries. That is, the alleged inaction "is too remote or insubstantial to impose liability." ***Schooley***, 134 Wn.2d at 478-479.

Putting "insubstantial" more directly, the RESTATEMENT says that "negligent conduct is a legal cause of harm to another" only if that "conduct is a substantial factor in bringing about the harm." RESTATEMENT (SECOND) OF TORTS § 431; ***State v. Meekins***, 125 Wn. App. 390, 396-97 & n.16,105 P.3d 420 (2005). Generally speaking, this "substantial factor" test does not apply to negligence actions in Washington. ***Blasick v. City of Yakima***, 45 Wn.2d 309, 314-15, 274 P.2d 122 (1954). But our Supreme Court also has held that the "substantial factor" test is helpful in determining legal cause where, as here, one defendant allegedly made an insignificant contribution to causing the injuries:

> As noted by Dean Prosser, the substantial factor test aids in the disposition of three types of cases. . . . Third, the test is used where one defendant has made a clearly proven but quite insignificant contribution to the result, as where he throws a lighted match into a forest fire. W. Keeton, D. Dobbs, R. Keeton & D. Owen, P ROSSER AND KEETON ON TORTS § 41 (5th ed. 1984).

Daugert v. Pappas, 104 Wn.2d 254, 262, 704 P.2d 600 (1985).[26] Some causes "are mere incidents of the operating cause [that],

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[26] Our courts have applied the substantial factor test in numerous other situations as well. *See, e.g.*, ***Wilmot v. Kaiser Alum. & Chem. Corp.***, 118 Wn.2d 46, 69-71, 821 P.2d 18 (1991) (worker's comp. retaliation); ***City of Federal Way v. PERC***, 93 Wn. App. 509, 513-14, 970 P.2d 752 (1998) (unionizing retaliation); ***Haberman v. WPPSS***, 109 Wn.2d 107, 130, 744 P.2d 1032 (1987) (state securities act); *see also* **WPI 15.02**.

while in a sense factors, are [nonetheless] so insignificant that the law cannot fasten responsibility upon one who may have set them in motion.'" ***Porter v. Sadri***, 38 Wn. App. 174, 177, 856 P.2d 612, *rev. denied*, 102 Wn.2d 1021 (1984); *accord* ***Hartley v. State***, 103 Wn.2d 768, 784, 698 P.2d 77 (1985).

For instance, the defendant glass-installer in ***Porter*** (Sadri) failed to install safety glass, as required by code, in a panel adjacent to the front door of a home, at the bottom of a stairwell. 38 Wn. App. at 175-76. The homeowners' child threw a baseball through this panel, shattering it, and although the owners intended to replace it with safety glass, different installers just used the same glass that Sadri had used. *Id.* at 176. After buying the house, Mrs. Porter fell down the stairs and through the window. The Porters sued Sadri, but the interim replacement of the window by another installer meant that Sadri's negligence had ceased to operate – its connection to the harm was too insubstantial as a matter of law – so the court dismissed the claim. *Id.* at 177.

In ***Hartley***, the plaintiffs' decedent was killed when a recidivist DUI offender (Johnson) drove drunk, due in part to the state's failure to revoke his driver license when it could have. The Court assumed *arguendo* that Johnson would have honored a five-

year revocation, in which case he would not have been driving on the night that he killed Hartley. *Id.* at 785. The Court nonetheless held that legal cause failed as a matter of law because "the failure to revoke Johnson's license . . . is too attenuated a causal connection to impose liability." *Id.*

Here too, legal cause is too remote and insubstantial. To place this issue in context, engineering expert Blake Anderson opined that the City breached its standard of care both over the long term and in this specific instance. RP 2076. Over the long term, Mr. Anderson identified four major deficiencies:

(1) the City failed to maintain a reasonably fail-safe overflow system, creating great risk to employees, many of whom did not know its status, failing to provide as-built drawings to document how the fail-safes were disabled, and failing to provide lock-out tags on the supernatant tree to ensure that the necessary valving was open at all times (RP 2077-80);

(2) the City was "flying blind," failing to maintain a reliable and accurate method for determining sludge levels inside the digesters, ignoring clear evidence that the SCADA readings were inaccurate, ignoring unequivocal reports of inaccuracies, and failing to establish a routine and independent methodology to test SCADA's accuracy, such as redundant measuring systems (RP 2080-83);

(3) the City failed to maintain a clear chain of command within the operations and maintenance divisions, placing Mr. King in charge of digester operations although he was the head of the maintenance division (RP 2084-85);

(4) the City failed to provide sufficiently specific standing orders, daily orders, and SOPs, giving operators cryptic instructions like, "Ensure all necessary pipes are open to allow clear path from the draw off to the proper pump," and "You would be best served by going through a trace of the system" (RP 2085-91).

As for the City's failures on May 10, Mr. Anderson opined that

(5) the City failed to activate an emergency gravity overflow of any kind on D3 (RP 2092-93);

(6) the City failed to stop transferring sludge into D3 when the SCADA reading exceeded 28 feet despite a standing order to do so (RP 2094-97);

(7) the City failed to stop the raw sludge feed at 2 p.m. despite an intent to do so (RP 2097-98);

(8) the City failed to properly set the three-way valve (2098-2101);

(9) when the problems continued, the City failed to take emergency measures, such as a gravity transfer from D3, shutting off the pumps from the console or otherwise, and simply going down and taking a careful look at why the transfer was not working (RP 2101-04); and

(10) placing men in harm's way on top of the dome without a sufficient understanding of what was actually going on, where Mr. Pelton did not know any of the above 9 circumstances leading to this accident, but knew or should have known that lifting the lid off the top of the dome was a very real and serious danger (RP 2104-06).

Every one of these 10 failures was a breach of the City's standard of care in running the plant. RP 2076-2106. The last one was "reckless." RP 2106. All of them are undisputed but the last, which is not really disputable.

The dome failure simply could not have happened unless this entire litany of City negligence also occurred (RP 2120-21):

(1) the City defeats the original fail-safe overflow;

(2) the City defeats the secondary fail-safe overflow, the supernatant tree;

(3) the operators disregard the 28-foot limit set by Mr. King;

(4) the SCADA system reads 10-to-15 feet too low without anyone doing a thing about it;

(5) the operators fail to correctly set up the transfer;

(6) the operators fail to stop the flow into D3; and

(7) the operators fail to take any one of several possible emergency steps to stop the overflow.

Moreover, separation of flows had nothing to do with this incredible series of events: having sludge flow out of D3 from one draw off pipe instead of two was inconsequential, and everything downstream from that was independent of the skillets. RP 2121.

Compared to the City's undisputed and overwhelming litany of negligence, CH2M's alleged role was truly insubstantial. It was not called, was not present, and had nothing to do with the events on May 10. The "connection" between its alleged failure to write something on a piece of paper and the collapse of a digester dome is far too remote and insubstantial to impose this entire $7.5 million

liability – in the face of the City's undisputed negligence and even recklessness – on the appellants. This is simply unjust.

Not only is it beyond all reason to attribute the legal cause of this incident to the absence of a writing telling the operators what they already knew better than CH2M, but it is bad policy. Under the contract and as a matter of fact, CH2M was not in control of this worksite. Since CH2M had absolutely no authority over or responsibility for the City's workers, it defies common sense to lay causation on CH2M.

3. The City's independent negligent and reckless conduct was the superseding cause of the dome collapse.

The plaintiffs also failed to establish legal causation because the City's reckless behavior was a superseding cause. The superseding cause doctrine "limits the situations in which legal causation can be held to exist between two events." ***Anderson v. Dreis & Krump Mfg. Corp.***, 48 Wn. App. 432, 443 n.5, 739 P.2d 1177, *rev. denied*, 109 Wn.2d 1006 (1987). "An intervening force is one which actively operates in producing harm to another after the actor's negligent act or omission has been committed." RESTATEMENT (SECOND) TORTS § 441 (1965). A "superseding cause" is an "intervening force" that "will break the original chain of

[legal] causation" between the defendant's act and the plaintiff's injury. ***Campbell v. ITE Imperia Corp.***, 107 Wn.2d 807, 813, 733 P.2d 969 (1987); *see also* RESTATEMENT § 440.

> This Court summarized superseding cause as follows:
>
> > The doctrine applies where the act of a third party intervenes between the defendant's original conduct and the plaintiff's injury such that the defendant may no longer be deemed responsible for the injury. ***Campbell*** [*supra*]; RESTATEMENT (SECOND) OF TORTS 440 (1965). Superseding cause thus prevents a determination of legal causation between a defendant's actions and a plaintiff's injuries where the intervening act breaks the otherwise natural and continuous causal connection between events. *See* ***Pratt v. Thomas***, 80 Wn.2d 117, 119, 491 P.2d 1285 (1971).

Anderson, 48 Wn. App. at 442. Our courts consider the following factors in determining whether an intervening force is a superseding cause:

> > (a) the fact that its intervention brings about harm different in kind from that which would otherwise have resulted from the actor's negligence;
> >
> > (b) the fact that its operation or the consequences thereof appear after the event to be extraordinary rather than normal in view of the circumstances existing at the time of its operation;
> >
> > (c) the fact that the intervening force is operating independently of any situation created by the actor's negligence, or, on the other hand, is or is not a normal result of such a situation;
> >
> > (d) the fact that the operation of the intervening force is due to a third person's act or to his failure to act;

(e) the fact that the intervening force is due to an act of a third person which is wrongful toward the other and as such subjects the third person to liability to him;

(f) the degree of culpability of a wrongful act of a third person which sets the intervening force in motion.

RESTATEMENT § 442; ***Campbell***, 107 Wn.2d at 812. Factors (b) through (f) indisputably are met here:

(b) the dome collapse is not an extraordinary consequence, but was an inevitable result of the City's gross litany of negligence in light of the always existing danger that such negligence would cause a collapse;

(c) all of the City's 10 intervening acts of negligence acted independently of CH2M's alleged negligence (the plaintiffs' argument that they are causally connected is incorrect for the many reasons argued above);

(d) the City's negligence independently caused all 10 of those intervening forces, and in particular independently caused the two immediate causes of the collapse (turning the three-way valve the wrong direction and failing to shut off the flow into D3) neither of which was affected by the skillets;

(e) the City's recklessness was certainly wrongful toward the plaintiffs and subjected the City to liability, albeit a liability frustrated by the City's legal immunity; and

(f) the City is and should be fully culpable for its 10 intervening acts of negligence.

The plaintiffs argued primarily that factor (a) precludes the City's negligence from being a superseding cause because the harm caused by the City's negligence is no different than the harm that would have resulted from CH2M's alleged negligence. This is

simply wrong. By itself, CH2M's alleged act – not writing an analysis of downstream effects – could never have caused the dome to collapse. Indeed, it is incredibly unlikely that it would ever cause any harm at all. The City's negligence and recklessness unquestionably caused different harms – the continued pumping into D3 that independently led to these plaintiffs' injuries.

In the most analogous case, this Court cut off causation as a matter of law, where multiple actions combined to supersede a defendant's negligence. ***Re v. Tenney***, 56 Wn. App. 394, 395, 783 P.2d 632 (1989). Defendant Cargill, who operated a grain elevator alongside Grain Terminal Road, negligently obstructed the road by allowing trucks to park on both shoulders while waiting to offload grain. ***Re***, 56 Wn. App. at 398. Terry Re was fatally injured while speeding on his motorcycle southbound on Grain Terminal Road, approaching the grain elevator. 56 Wn. App. at 395. Re attempted to pass a tractor-trailer rig driven by Martin Tenney just as Tenney crossed the centerline to park on the opposite shoulder. *Id.* at 395-96. Re attempted to cut back into the right lane, but hit Tenney's rig, sustaining fatal injuries. *Id.* at 396. This Court held that Re's excessive speed and inattention coupled with Tenney's lane change combined to supersede Cargill's negligence. *Id.* at 399.

Here too, the City's many undisputed and active negligent acts combined to supersede any alleged passive negligence by CH2M and Mr. Irving. The City's negligence is the superseding cause of those injuries. The Court should reverse and dismiss.

CONCLUSION

What happened here is truly a tragedy for the plaintiffs, their families, and the community. But CH2M and Mr. Irving are, like the City, immune under the IIA. Moreover, they owed no duty to these plaintiffs. Ultimately, the law should not permit the unjust imposition of 100% liability on a defendant whose real responsibility, if any, is far too remote and insubstantial. For the reasons stated above, the Court should reverse and dismiss.

RESPECTFULLY SUBMITTED this 24th day of June, 2009.

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CERTIFICATE OF SERVICE BY MAIL

I certify that I mailed, or caused to be mailed, a copy of the foregoing **BRIEF OF APPELLANTS** postage prepaid, via U.S. mail on the 24th day of June, 2009, to the following counsel of record at the following addresses:

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SUPERIOR COURT, SPOKANE COUNTY, WASHINGTON

LARRY MICHAELS, et ux,
Plaintiffs,
v.
CH2M HILL, INC., a Florida corporation; and KELLY IRVING,
Defendants.

CONSOLIDATED NO. 07-2-02018-1

PLAINTIFFS' FINDINGS OF FACT AND CONCLUSIONS OF LAW

DAN EVANS, a single person,
Plaintiff,
v.
CH2M HILL, INC., a Florida corporation; and KELLY IRVING,
Defendants.

NO. 07-2-01975-2

KATHY D. CMOS, as Personal Representative of the Estate of Mike P. Cmos, Jr.,
Plaintiff,
v.
CH2M HILL, INC., a Florida corporation; and KELLY IRVING,
Defendants.

NO. 07-2-01833-1

KATHY D. CMOS, individually and as Administratrix, et al.,
Plaintiffs,
v.
CH2M HILL, INC., a Florida corporation; and KELLY IRVING,
Defendants.

NO. 07-2-01974-4

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THIS MATTER was tried to the Court, without a jury, from September 8, 2008 to September 30, 2008. The undersigned judge presided at the trial. The claims presented at trial for adjudication were as follows:

1. Whether Defendants CH2M Hill, Inc. ("CH2M" hereafter) and Kelly Irving ("Irving" hereafter) owed a legal duty to these plaintiffs.

2. If Defendants CH2M and Irving owed a legal duty to these plaintiffs, what was the duty.

3. Whether Defendants CH2M and Irving breached that duty.

4. Whether any breach of that duty by Defendants CH2M and Irving was a proximate cause of the Plaintiffs' injuries and death.

5. Whether any acts by the City of Spokane ("City" hereafter) or employees at the plant, or any other cause, constitute an intervening, superseding cause of Plaintiffs' injuries and the death of Mike Cmos.

6. Whether the Plaintiffs Larry Michaels, Dan Evans or decedent Mike Cmos were contributorily negligent.

7. The nature and extent of each Plaintiff's damages.

8. Whether CH2M or Irving is immune from liability under RCW 51.24.035.

The following issues were not disputed:

1. Jurisdiction and venue in this court are proper.

2. Plaintiffs' cause of action is negligence.

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3. Plaintiffs did not assert a cause of action against CH2M and Irving for breach of contract. However, Plaintiffs did allege CH2M and Irving assumed contractual duties which they performed negligently.

4. Plaintiffs agreed that the City was negligent, and that such negligence was a cause of their injuries and damages.

Plaintiffs Cmos appeared at trial through the Personal Representative of the Estate of Mike Cmos and through their attorneys of record, Daniel E. Huntington and Jay E. Leipham, of Richter-Wimberley, P.S., and Gary N. Bloom, of Harbaugh & Bloom, P.S. Plaintiffs Evans and Michaels appeared personally and through their attorneys of record, Richard C. Robinson and Aaron M. Naccarato, of Layman, Layman & Robinson, PLLP. Defendant CH2M appeared through Kelly Irving, as its corporate representative, and through its attorneys of record, Terence J. Scanlan and Beth M. Andrus, of Skellenger Bender, P.S. Defendant Irving appeared personally and through his attorneys, Terence J. Scanlan and Beth M. Andrus, of Skellenger Bender, P.S.

The witnesses who were called and testified at the trial are identified in the witness list attached hereto as Exhibit A.

The exhibits which were offered, admitted into evidence and considered by the Court are set out in the list attached as Exhibit B.

Each Finding below relates to all other Findings and is not restricted to the heading of the section in which is listed.

Based on the evidence presented at trial, the Court makes the following:

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The Court's Memorandum Opinion filed October 17, 2008, is incorporated into these Findings of Fact and Conclusions of Law.

APPENDIX A

I. FINDINGS OF FACT

A. Background

1. The injuries and death at issue in this matter occurred at approximately 3:10 p.m., May 10, 2004, when the domed roof of Digester 3 of the City's sewage treatment plant collapsed.

2. Mike Cmos, Dan Evans and Larry Michaels were each employed by the City and were acting within the course and scope of their employment at that time.

3. Mike Cmos and Dan Evans were on the dome of Digester 3 with the knowledge and approval of the plant superintendent when the digester dome collapsed.

4. Mike Cmos died from drowning when the digester dome collapse dropped him into the sewage sludge in Digester 3; Dan Evans was injured when he was thrown off the dome and then was drenched in sludge; Larry Michaels was hit by cascading sludge, knocked down and injured.

B. Whether Defendants CH2M and Irving owed a legal duty to these Plaintiffs.

5. CH2M is a foreign corporation engaged in the provision of engineering services within the State of Washington.

6. Irving is an engineer licensed in the State of Washington, and at all times relevant hereto was an employee of CH2M, acting within the course and scope of his employment and engaged in the provision of engineering services within the State of Washington.

7. In October, 1998, CH2M and the City entered into a Standard Consultant Agreement. (Exhibit P-1) The Standard Agreement includes the following provision:

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> The Consultant [i.e., CH2M] hereby agrees to indemnify and hold the Agency [i.e., the City] and their officers and employees harmless from and shall process and defend at its own expense all claims, demands, or suits at law or equity arising from the Consultant's negligence or breach of any of its obligations under this Agreement; provided that nothing herein shall require the Consultant to indemnify the Agency against and hold harmless the Agency from claims, demands, or suits based solely upon the conduct of the Agency, their agents, officers and employees. (Brackets added.) (Exhibit P-1, §XIII, p. 6)

8. Exhibit I to the Standard Consultant Agreement set forth additional terms and conditions, including the following:

> A. STANDARD OF CARE. The standard of care applicable to Consultant's [i.e., CH2M's] services will be the degree of skill and diligence normally employed by professional engineers or consultants performing the same or similar services at the time said services are performed . . . . (Brackets added.) (Exhibit P-1, Exhibit I, ¶A)

9. These provisions of the contract were not modified prior to May 10, 2004.

10. At all pertinent times, CH2M maintained a full-time project management office ("PMO" hereafter) at the plant, and Irving served as CH2M's on-site program manager for the above contract.

11. At all pertinent times, Irving was the program manager for CH2M at the sewage treatment plant and his job description included: to manage the program, manage all design projects, manage all change, and assist the City with plant operational problems.

12. At all pertinent times, it was foreseeable to CH2M and Irving that failing to exercise the applicable standard of care could create a significant risk of bodily injury or death to persons present upon the premises of the plant, including the employees of the City who were operating or maintaining the plant.

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13. At all pertinent times, CH2M and Irving understood that the plant's purpose was to treat raw sewage to render it reasonably safe for disposal in accordance with governmental discharge permits, and that the process involved large quantities of a slurry of human excrement and sewage waste (hereafter "sludge") being treated and stored in three large reinforced concrete domed tanks (hereafter "digester(s)") which was heated and recirculated in each digester and transferred between the digesters by means of a system of pipes and valves, using pumps or gravity.

14. At all pertinent times, CH2M and Irving were aware that City operations at the plant routinely and regularly required the recirculation of sludge through heaters and the transfer of sludge between digesters by use of the plant's recirculation pumps, through various valves and large pipes within and between the digesters.

15. Irving prepared, and the City and CH2M entered into, a modification to CH2M's contract with the City effective in March, 2003, called Work Modification 7 (Exhibit P-4), providing, in part, that CH2M would design and manage an upgrade to and redesign of the recirculation and heating system for the digesters, and that CH2M would provide "on-call" services for plant operations. (Exhibit P-4, §6; §16)

16. Work Modification 7 was incorporated into Contract Amendment No. 6 and entered into by the City and CH2M on March 26, 2003. (Exhibit P-5, §D, p. 10; §E, p. 11)

17. One of the reasons for Work Modification 7 was that the digester heating system was experiencing problems maintaining a high enough digester temperature for efficient digester operation.

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18. CH2M began the conceptual design of the digester recirculation and heating system in November, 2003. (Exhibits P-6, P-7)

19. By December, 2003, CH2M had completed the scoping and continued the conceptual design for the Digester Recirculation and Heating Design Project. (Exhibits P-8, P-9)

20. In December, 2003, Irving and another CH2M engineer conducted a walk-through inspection of the wastewater treatment plant digester area as part of the Digester Recirculation and Heating Design Project, and, among other things, noted that plant operators used the recirculation pumps to transfer sludge between digesters. (Exhibit P-10)

21. CH2M prepared a Technical Memorandum concerning the Digester Recirculation-Heating Conceptual Design dated February 23, 2004, which, among other things, described the problem at the wastewater treatment plant maintaining sufficient digester temperatures, and noted the daily transfer of sludge from digester to digester by use of the recirculation pumps. (Exhibit P-11)

22. In the Agenda for the wastewater treatment plant Design Kick-off Meeting for the Digester Recirculation-Heating Project, dated March 31, 2004, CH2M set forth a Conceptual Design Overview which listed issues regarding sludge heating and sludge transfers. (Exhibit P-15)

23. One of the reasons for the sludge heating problem was a pump pressure conflict between the colder raw sludge "feed" coming into the digester from the plant's gravity belt thickeners, called "GBTs," and sludge which was recirculating through heaters and reentering the digester through the same line as the incoming raw sludge feed.

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24. CH2M and Irving recommended that this pump conflict be resolved by separating the raw sludge feed coming from the GBTs and the recirculating flow coming from the heaters. This recommendation was not developed in a single "brainstorming" session, but was part of the ongoing engineering services of CH2M pursuant to Work Modification 7 and Contract Amendment No. 6.

25. Minutes of a PMO Weekly Digester/Heating Design Meeting dated April 28, 2004, set forth CH2M's recommendation that "piping mods will be done so digester recirc and digester feed do not go through same pipe to enter digester." (Exhibit P-16) This was a regularly scheduled design meeting, usually attended only by CH2M personnel and their subcontractors, in furtherance of CH2M's ongoing engineering design services pursuant to Work Modification 7 and Contract Amendment No. 6.

26. At a regularly scheduled May 3, 2004 meeting between certain CH2M employees and the City's plant supervisors, Irving recommended that the separation of the GBT feed sludge and the recirculated sludge be achieved by installing valves in the existing recirculation piping for each of the three digesters.

27. Mr. Irving's written summary for that meeting refers to the sludge flow separation as "digester recirc piping reroute" ("High" priority) and identifies it in a box entitled "Change Management" (Exhibit P-18, p. 2) which was described by Irving as indicating that this was a CH2M task.

28. The flow separation was recommended by CH2M under Work Modification 7 and Contract Amendment No. 6 as an interim design change to the recirculation system and as an

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"on-call" service to the City. In either event, this recommendation constituted engineering design services provided to the City by CH2M. This was an interim fix to a complicated piping system that had to remain operational.

29. CH2M described their activities at the May 3, 2004, meeting as follows: "Mr. Irving suggested the use of a valve to potentially separate the raw sludge feed from the recirculating biosolids on a temporary basis until the CH2M Hill design for a modified recirculation system was finalized."

30. The purpose of the valves recommended by Irving was to redirect sludge from the heaters back into each digester through a previously unused pipe into a newly isolated line which had originally been designed as a suction line for removing sludge from the digester, and to close off the intersection between the recirculation line from the heater and the incoming raw feed from the GBTs.

31. City supervisors attending this May 3, 2004 meeting included: the plant Superintendent, Tim Pelton; Operations Supervisor, Mike Gavin; Maintenance Supervisor, John King; and Lab Supervisor, Mike Coster.

32. City plant staff suggested that a metal plate, referred to as a "blank flange" or a "skillet," be used instead of the valve proposed by Irving and CH2M, because it would be more expedient and less expensive.

33. Irving and CH2M accepted the suggestion of the insertion of a skillet in lieu of a valve and agreed that the skillet served the same essential function as a valve.

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34. Irving participated in deciding the physical location for the valves/skillets within the digester piping system.

35. Irving and CH2M knew that the skillets would be installed by the City on May 4 and 5, 2008.

36. On May 4 and 5, 2008, the skillets were installed at the location chosen with the participation of Irving and CH2M.

C. What duty Defendants CH2M and Irving owed to the Plaintiffs.

37. The relevant engineering standard of care is the degree of skill and diligence employed by a reasonably prudent professional engineer or consultant in the State of Washington providing engineering services under the same or similar circumstances as at the time of the engineering services in question.

38. That standard of care required CH2M to perform an engineering analysis of the ways in which the modification involving the flow separation may affect use and operation of the plant, including the procedures and operations utilized by the plant operators.

39. That standard of care required CH2M, upon making such recommendation, to inform the plant supervisors of the results of such engineering analysis, and to put that engineering analysis in writing, specifically including: (1) all effects of the flow separation modification upon procedures and operations utilized by plant operators; (2) the need for new Standard Operating Procedures (SOPs) encompassing the consequent changes; and (3) the need for training of the plant's operators to comply with such new SOPs.

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D. Whether Defendants CH2M and Irving breached the relevant standard of care.

40. Neither Irving nor any other CH2M employee performed any engineering analysis of the effects the flow separation and the skillets would have upon the City's operation of the digesters, and failed to understand or discover that the skillets would alter valving used by City plant operators for pumped transfers of sludge between the digesters, more specifically the valving used for a pumped transfer from Digester 3 to Digester 2. Performance of such an analysis, and the preparation and provision of a written analysis to the City, is an engineering duty which under the circumstances in this case an engineer cannot delegate or transfer to someone who is not an engineer, including the City's Maintenance Supervisor.

41. The failure of Irving and CH2M to perform such engineering analysis constituted a failure to exercise the degree of skill and diligence normally employed by professional engineers or consultants performing the same or similar services at the time said services were performed in May, 2004.

42. At the time of the above-referenced May 3, 2004 meeting, neither the plant Superintendent, the Operations Supervisor nor the Maintenance Supervisor were aware that installation of the skillets would change valving used by City plant operators for pumped transfers between the digesters, specifically the valving used for a pumped transfer of sludge from Digester 3 to Digester 2. The trial testimony of Maintenance Supervisor John King to the contrary was not reliable.

43. CH2M and Irving failed to communicate to the City's plant supervisors at the May 3, 2004 meeting, or at any time thereafter and prior to the dome collapse of Digester 3 , in

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writing or otherwise, the effects of the installation of the skillets upon the valving used by City plant operators for pumped transfers between the digesters, specifically the altered valving to be used for a pumped transfer of sludge from Digester 3 to Digester 2.

44. The failure of CH2M and Irving to provide the written analysis set forth in Finding of Fact 39, above, to the City's plant supervisors before the installation of the skillets, constituted a failure to exercise the degree of skill and diligence normally employed by professional engineers or consultants performing the same or similar services at the time said services were performed in May, 2004.

E. Whether any alleged breach by Defendants CH2M or Irving was a proximate cause of Plaintiffs' injuries.

45. The first attempt to pump a sludge transfer from Digester 3 to Digester 2 after the skillet installation took place at approximately 2:00 p.m. on May 10, 2004.

46. At that time, the operator in charge of the day shift, Terry Headley, became concerned that Digester 3 was too full, and ordered the stoppage of an ongoing pumped transfer of sludge from Digester 2 into Digester 3, and the start of a pumped transfer back out of Digester 3 into Digester 2.

47. The operators to whom Mr. Headley gave the above instructions were Rick Thain and Terry Fletcher, his subordinates.

48. Mr. Headley knew that the skillets had been installed, and knew the physical locations in which they had been installed, but did not know that the skillets had changed valving for a pumped transfer from Digester 3 to Digester 2.

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49. No one gave Mr. Headley, Mr. Thain or Mr. Fletcher any instruction regarding the effects of the installation of the skillets on the valving employed by the plant operators for pumped transfers of sludge from Digester 3 to Digester 2, nor were they given any instruction concerning how any valves should be set to effect a pumped transfer after the installation of the skillets.

50. Testimony by former Maintenance Supervisor John King that he knew the effects of the skillets on valving for pumped transfers and orally communicated those effects and the proper post-skillet valving for transfers to Mr. Gavin, Mr. Headley, Mr. Knox, Mr. Fletcher, Mr. Michaels and others is inconsistent with his deposition testimony and the testimony of Mr. Irving, is contradicted by the testimony of those he claims to have instructed, and is not reliable.

51. Upon receiving Mr. Headley's order to start a pumped transfer from Digester 3 to Digester 2, Mr. Thain and Mr. Fletcher twice attempted to trace the piping of the digesters to determine how to valve a pumped transfer from Digester 3 to Digester 2, checked and rechecked their work and believed that they had valved correctly for such a pumped transfer in light of the installation of the skillet.

52. After tracing the lines, Mr. Thain and Mr. Fletcher adjusted a three-way valve on the transfer line on the "17 level" of Digester 3, then went down to the "01 level" of Digester 3 and closed a valve on the recirculation system for that digester to "make sure" the transfer had been effected.

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53. Prior to the installation of the skillets, neither of these valves was customarily used in valving a pumped transfer out of Digester 3 to Digester 2.

54. Mr. Thain and Mr. Fletcher believed that their efforts had started a pumped transfer of sludge from Digester 3 to Digester 2, and proceeded with their end-of-shift tasks elsewhere in the plant.

55. In fact, the 3-way valve on the "17 level" had been set the wrong way, and turned the sludge back toward Digester 3 instead of toward Digester 2. Additionally, the valve change on the "01" level prevented sludge from re-entering the digester.

56. The valving which Mr. Thain and Mr. Fletcher set up actually created a "deadhead," and the recirculation pumps were not pumping sludge out of Digester 3. This was not simply a "mistake" or a combination of "mistakes." These experienced operators failed to valve the transfer correctly because they were confused by the installation of the skillets and because they had not been given any training or instruction regarding the proper valving for sludge transfers after the skillet installation.

57. If CH2M and Irving had complied with the standard of care by providing a written analysis regarding the effects of the skillet installation on valving operations, it is more probable than not that the operators would have known how to properly valve the attempted pumped transfer from Digester 3 to Digester 2 on May 10, 2004, the pumped transfer would have been successful, the dome collapse would not have occurred, Mike Cmos would not have drowned and Dan Evans and Larry Michaels would not have been injured.

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58. The failure of Irving and CH2M to comply with the applicable professional standard of care was a proximate cause of the collapse of the dome of Digester 3 on May 10, 2004, the death of Mike Cmos and the bodily injuries of Dan Evans and Larry Michaels.

59. Just prior to the dome collapse, when Plant Superintendent Tim Pelton saw sludge dripping from the pressure relief valves on top of Digester 3, he reasonably believed that a temporary foaming event was occurring. He did not know that the plant had no functioning digester overflow system. He was not aware of the level of sludge in the digester, nor did he know that raw sludge was still being fed into Digester 3 from the GBTs. He did not know that the SCADA system was malfunctioning. He did not know that the skillets had changed the valving for transfers, or that the operators on duty were confused about how to properly valve a transfer from Digester 3 to Digester 2, or that such a transfer had been attempted at 2:00 p.m. that day. He did not know nor should he have known that Digester 3 was in imminent danger of collapse.

60. The negligence, if any, of Pelton was a concurrent cause of the death of Mike Cmos and injuries of Dan Evans and Larry Michaels. Such negligence, if any, was not the sole proximate cause of the death of Mike Cmos and the injuries of Dan Evans and Larry Michaels.

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F. Whether any acts by the City of Spokane or employees at the plant, or any other cause, constitutes an intervening or superseding cause.

61. CH2M's failure to comply with the applicable standard of care created the hazard that City plant operators would be confused and unable to effectuate a pumped transfer of sludge out of an overfilled digester.

62. The hazard of injury or death from overfilling and collapsing the digester dome created by any acts or omissions of the City is the same type of hazard that was created or increased by CH2M's failure to comply with the standard of care.

63. Despite the blocked digester overflow and the inaccurate SCADA measurements of the sludge level in Digester 3 on May 10, 2004, the digester dome would not have collapsed if the operators had been able to transfer sludge out of Digester 3 approximately one hour before the digester dome collapse. The operators' inability to transfer sludge out of Digester 3 was caused by CH2M and Irving's failure to comply with the applicable standard of care. The situation created by the acts or omissions of the City resulting in overfilling and the collapse of the digester dome did not operate independently from the situation created by CH2M and Irving's failure to comply with the standard of care, which also resulted in overfilling and the collapse of the digester dome.

64. A reasonably prudent engineer in the position of CH2M could reasonably have anticipated that a plant which had been in continuous operation for over thirty years may have undergone modification or disabling of safety features, including the blocking of the digester overflow system.

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65. A reasonably prudent engineer in the position of CH2M could reasonably have anticipated that the City would take all measures it deemed appropriate to comply with its discharge permit to prevent sludge from entering the Spokane River, including sending employees onto the dome of a digester to divert sludge or foam dripping from pressure relief valves and scuppers.

66. A reasonably prudent engineer in the position of CH2M could reasonably have anticipated that the SCADA system used to monitor sludge levels in the digesters could malfunction or be inaccurate.

67. The dome of Digester 3 collapsed and the subject death and injuries occurred as a direct and proximate result of the failure of CH2M and Irving to comply with the applicable standard of care, in concurrence with the acts and omissions of the City.

68. There was no independent intervening cause that superseded the negligence of CH2M and Irving.

G. Whether any of the Plaintiffs were contributorily negligent.

69. Mr. Pelton's proposal to divert sludge into a drain was conveyed to Larry Michaels, Mike Cmos and Dan Evans, and Evans, Michaels and Cmos were obeying explicit or implicit instructions of Plant Superintendent Pelton when the dome of Digester 3 collapsed.

70. Evans, Michaels and Cmos neither knew nor should have known that Digester 3 was in imminent danger of collapse.

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71. Evans, Michaels and Cmos acted reasonably and exercised ordinary care in complying with the instructions they had been given by their superiors, in being where they were and doing what they were doing when the dome unexpectedly collapsed.

72. Larry Michaels, Dan Evans and Mike Cmos were not contributorily negligent.

H. The nature and extent of each Plaintiff's damages.

73. On May 10, 2004, Mike Cmos was survived by his wife, Kathy Cmos, and his twelve-year old daughter, Jennifer Cmos.

74. The testimony of economist Robert Moss was unrebutted and uncontradicted.

75. Until his drowning death, Mike Cmos had been in good physical health.

76. If he had not drowned, Mike Cmos probably would have worked at least through his statistical work life expectancy of 15.3 years, and probably would have earned an income and fringe benefits at least equal to what he was earning at the time of his death, plus normal wage and benefit growth.

77. If he had not drowned, Mike Cmos probably would have lived a normal life expectancy for a man of his age, i.e., 31 additional years, to age 77.7.

78. If he had not drowned, Mike Cmos probably would have contributed at least an average amount of household services to his marital community throughout his life expectancy. The present value of the loss of household services that Mike Cmos would probably have provided to the marital community totals $239,145.00

79. After adjusting for Mike Cmos' personal consumption had he lived, the present value of the probable past and future losses of wages and employment benefits suffered by his

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Estate and his surviving spouse and dependent daughter as a result of his death on May 10, 2004 total $412,580.00.

80. The Cmos Estate incurred expenses incident to the death and burial of Mike Cmos in the stipulated amount of $14,122.94.

81. Mike Cmos suffered one of the most disgusting and terrible deaths imaginable. Mike Cmos was fully conscious when the digester dome raised up twice and then fractured underneath him. He suffered great conscious mental anguish from the moment the digester dome first raised up until he became submerged in the sludge of Digester 3. The comprehensive testimony of Dr. Jerome Modell concerning the physical and mental process of drowning was unrebutted and was credible. After Mr. Cmos became submerged in the sludge, it is likely that he endured at least two minutes of suffocation-type symptoms, including excruciating physical pain from laryngospasm, and mental and emotional anguish and terror, with the conscious realization that he was drowning in 100 degree sewage sludge. The last two minutes of his life were suffered in darkness, pain and utter helplessness. This resulted in damages in the amount of $2,665,000.00.

82. Kathy Cmos has suffered and will suffer marital consortium damages. Kathy Cmos was 45 years old when her husband drowned. At the time of his death, they had been married 24 years. They had an extremely close, loving and supportive relationship. Neither Kathy nor Mike Cmos had been involved in any prior committed relationships. After twelve years of marriage, Kathy gave birth to their daughter Jennifer on January 25, 1992. There was considerable evidence produced at trial which supports a finding that this was a close and

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committed family unit that engaged in a wide spectrum of family activities. Kathy and Mike Cmos enjoyed a committed relationship that gave much emotional support, love, affection, care and companionship to Kathy Cmos. None of the evidence of the relationship between Kathy and Mike Cmos was rebutted, and that evidence was credible.

83. After Mike Cmos drowned on May 10, 2004, Kathy Cmos lost her husband, her lover and her best friend. She became the single parent of her twelve-year-old daughter. Acting in the best interests of her daughter, Kathy Cmos moved from Spokane to the remote area of Bead Lake so as to provide her daughter with small-town, small-school nourishment and support mechanisms. In the course of providing this supportive environment for her daughter, Kathy Cmos placed herself into relative isolation in a remote mountain lake area north of Newport, Washington. Since her husband's death, Kathy Cmos has suffered great loneliness and isolation, and does not believe that she will ever find a companion who will be able to replace her deceased husband, Mike Cmos. The evidence elicited at trial supports a finding that Kathy Cmos has suffered and will continue to suffer marital consortium damages for the loss of her husband's fellowship, support, love, affection, care, services, companionship, including sexual companionship, and assistance, the total value of which is $2,000,000.00.

84. Jennifer Cmos was twelve years old when her father drowned. Prior to her father's death, Jennifer enjoyed an unusually close relationship with her dad. When she was in the third grade, Jennifer wrote a letter nominating her dad for "Father of the Year" in a local newspaper contest. Mike Cmos regularly went bicycling with his daughter and took her fishing on frequent occasions. They engaged in many outdoor activities at their recreational trailer at

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Bead Lake. Mike Cmos gave considerable "dad-type" advice to his daughter upon which she relied for guidance. He was her problem-solver, counselor and comforter. Following May 10, 2004, Jennifer Cmos has been raised by her mother. Since her father's death, there has been a great void in her life as a consequence of her father's lost love, care, companionship and guidance. The closeness that she felt to her dad will never be felt again. None of the evidence of the relationship between Jennifer and Mike Cmos was rebutted, and that evidence was credible. The evidence produced at trial supports a finding that Jennifer Cmos has suffered and will suffer the loss of her father's love, care, companionship and guidance, as well as the destruction of their father-daughter relationship and general damages for the loss of her father, the value of which is $650,000.00.

85. Plaintiff Dan Evans sustained serious personal injuries as a result the collapse of the dome of Digester 3. Mr. Evans sustained a fractured pelvis, fractured tibia, fractured ribs, serious back injuries including compression fractures of vertebrae, sludge aspiration causing a permanent 20% reduction in his lung capacity, colitis, and Irritable Bowel Syndrome as well as significant and continuing psychological injuries including post traumatic stress disorder and depression. The testimony and evidence regarding these injuries was unrebutted and credible.

86. Plaintiff Dan Evans incurred the amount of $165,420.69 as reasonable and necessary medical expenses for the serious injuries he sustained as a result of Digester 3 collapsing on May 10, 2004. This amount was admitted by stipulation and is not disputed.

87. Plaintiff Dan Evans testified that he was unable to return to work for a year after the accident and that he lost sick leave and vacation benefits (1.5 hours and 9.8 hours per pay period,

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respectively) which would have otherwise accrued. His testimony established that he had been making approximately $23.00 per hour and that he missed approximately 120 hours of overtime as the result of his injuries. All of this testimony was admitted without objection and unrebutted. Accordingly, Dan Evans sustained economic damages in the amount of $51,980 for lost wages and $6,757.40 in lost vacation and sick leave benefit accruals.

88. Plaintiff Dan Evans testified that he sustained severe physical pain and suffering as a result of the injuries he sustained when Digester 3 collapsed on May 10, 2004 and that he continues to have significant pain and physical limitations as the result of the injuries he sustained. Plaintiff Dan Evans and his wife, Dawn Evans, both testified with respect to his physical limitations as the direct result of this incident as well as his significant and severe mental distress as a result of the Digester 3 collapse on May 10, 2004. As a direct result of this incident, Plaintiff Dan Evans continues to suffer from post traumatic stress disorder as well as depression, both of which will require further treatment in the future. The evidence supporting Mr. Evans' claim of psychological injuries is supported by the unrebutted evidence provided by Drs. Hurley, Davis and Grant (Defendants' IME physicians). Accordingly, Mr. Evans has sustained and will continue to sustain general damages for pain, suffering, and emotional and mental distress, valued in the amount of $1,000,000.00.

89. Plaintiff Larry Michaels sustained serious personal injuries as a result the collapse of the dome of Digester 3. Mr. Evans sustained serious injuries to his right knee, back injuries and significant and continuing psychological injuries including post traumatic stress disorder and depression. The testimony and evidence regarding these injuries was unrebutted and credible.

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90. Plaintiff Larry Michaels incurred the amount of $30,987.11 as reasonable and necessary medical expenses for the serious injuries he sustained as a result of Digester 3 collapsing on May 10, 2004. This amount was admitted during the testimony of Dr. Kerkering and was not disputed.

91. Plaintiff Larry Michaels testified that he was unable to return to work approximately 6 months after the accident and that he lost sick leave and vacation benefits (1.5 hours and 9.8 hours per pay period respectively) which would have otherwise accrued. His testimony established that he had been making approximately $25.00 to 26.00 per hour at the time of his injury. All of this testimony was admitted without objection and unrebutted. Accordingly, Larry Michaels sustained economic damages in the amount of $26,000 for lost wages and $3,745.95 in lost vacation and sick leave benefit accruals.

92. Plaintiff Larry Michaels testified that he sustained severe physical pain and suffering as a result of the injuries he sustained when Digester 3 collapsed on May 10, 2004 and that he continues to have significant pain and physical limitations as the result of the injuries he sustained, both with respect to his significant knee injuries and limitations as well as his continued back pain. Plaintiff Larry Michaels and his wife, Debbie Michaels, both testified with respect to his physical limitations as the direct result of this incident as well as his significant and severe mental distress as a result of the Digester 3 collapse on May 10, 2004. As a direct result of this incident, Plaintiff Larry Michaels continues to suffer from post traumatic stress disorder as well as depression, both of which will require treatment in the future. The evidence supporting Mr. Michaels' claim of psychological injuries is supported by the unrebutted evidence provided

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by Drs. Kerkering and Grant (Defendants' IME physician) as well as Thomas Stebbins. Accordingly, Mr. Michaels has sustained and will continue to sustain general damages for pain, suffering, and emotional and mental distress in the sum of $250,000.00.

93. Plaintiff Debbie Michaels testified with respect to the impact that Larry Michaels' psychological and physical injuries had on her marriage as well as her relationship with her husband. The evidence elicited at trial supports a finding that Debbie Michaels has suffered and will continue to suffer marital consortium damages for the loss of her husband's fellowship, support, love, affection, care, services, companionship, including sexual companionship, and assistance the total value of which is $50,000.00.

I. Whether CH2M HILL or Kelly Irving is immune from liability under RCW 51.24.035.

94. At all pertinent times prior to and on May 10, 2004, the area of the plant where the skillets were installed was not a construction project nor a construction site within the meaning of RCW 51.24.035(1).

95. The Irving proposal to separate sludge flows referenced above in these Findings constitutes the negligent preparation of a design plan within the meaning of RCW 51.24.035(2).

Based upon the foregoing findings, the Court hereby makes the following:

II. CONCLUSIONS OF LAW

1. This court has jurisdiction of the parties and issues involved in this matter.

2. Venue in this court is appropriate.

3. Defendants, and each of them, owed these plaintiffs, and each of them, both a contractual and a common law duty to exercise that degree of skill and diligence normally

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employed by professional engineers or consultants performing the same or similar services at the time said services were performed.

4. Defendants, and each of them, failed to comply with the applicable engineering standard of care and such failure constitutes negligence.

5. The Defendants' failure to comply with the applicable engineering standard of care was a proximate cause of the death of Mike Cmos and the bodily injuries of Dan Evans and Larry Michael on May 10, 2004.

6. The negligence of the City of Spokane was a concurrent cause of the death of Mike Cmos and the bodily injuries of Dan Evans and Larry Michael on May 10, 2004.

7. The negligence of the City of Spokane was not the sole proximate cause of the death of Mike Cmos or the bodily injuries of Dan Evans or Larry Michael on May 10, 2004.

8. Neither the acts or omissions by the City of Spokane, nor any other cause, constitute an intervening, superseding cause of the death of Mike Cmos or the bodily injuries of Dan Evans or Larry Michael on May 10, 2004.

9. No acts or omissions of Plaintiffs Dan Evans or Larry Michaels, or decedent Mike Cmos, constitute contributory negligence.

10. Defendants are not entitled to immunity under RCW 51.24.035.

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11. Judgment should be entered in favor of plaintiffs, and each of them, for the damages found above.

DONE IN OPEN COURT this 26 day of November, 2008.

THE HONORABLE ROBERT D. AUSTIN

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IN THE SUPERIOR COURT OF THE STATE OF WASHINGTON

IN AND FOR THE COUNTY OF SPOKANE

LARRY MICHAELS, et ux, et al Plaintiffs, v CH2M HILL, INC., a Florida corporation and KELLY IRVING, Defendants.	)	CONSOLIDATED No. 07-2-02018-1 MEMORANDUM OPINION

DUTY

All parties agree the City of Spokane was negligent in causing the death and injuries to the Plaintiffs in this case on May 10, 2004. The issue here is was the City's on-call, paid, Consulting Engineers, CH2MHill and Kelly Irving, also negligent in causing the death and injury to the Plaintiffs? If no, then the City is the sole negligent entity. If yes, then the Plaintiffs must prove the Defendants' negligence is concurrent to the City's negligence. Defendants also have the burden of proving that some negligence of the City is an intervening and superceding cause of Plaintiffs' death and injuries. The City is not a party to this litigation, although one defense witness termed the city's conduct as reckless.

All three Plaintiffs' claims arise from the same claimed negligence of defendant CH2MHill and Kelly Irving. Plaintiffs claim that Defendants had a duty to them as city employees at the Waste Water Treatment Plant not to negligently design an engineering project that would fail and cause death and/or injury to them as employees at the plant. Specifically,

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Plaintiffs allege that the Defendants breached their standard of care as engineers in failing to give a written assessment of the effect of a suggested piping modification while the plant continued to operate. Plaintiffs contend that the absence of such an assessment was negligence in that it did not prompt the City to provide training to operators on any valving changes nor to modify standard operating procedures (SOPs). They also contend that the injuries were foreseeable to Defendants, that this was an interim fix to a complicated piping system which was a specific design task allocated to Defendants by the contract with the City; that the defendants had been on site for some years and understood the operations and maintenance protocols or lack thereof.

Defendants claim that a written assessment was not required because the suggestion of the addition of a valve was done at a brainstorming session and was a mere suggestion and not a design; that it was modified by the City in blocking off a pipe rather than installing a valve; that the actual design and manufacture of the block-off skillet was done by the City and it was installed by the City, without the Defendants' help or input. The Defendants contend that the City did not ask for an assessment because they already knew the effect of the skillet. They contend that any failure to train or warn City employees, such as Plaintiffs, was solely the fault of the City.

The analysis of this case is according to classic professional negligence law which is: Professional Duty; Breach of Duty; Which Proximately Causes; Damages. The duty owed to Plaintiffs, if any, is found in the standard of care of a professional engineer in Defendant's contract with the City, Exhibit I to Pl Exhibit 1; "Standard of Care", Pl Exhibit 4, #6 "On Call Assistance" with plant operations; and Pl Exhibit #3 Scope of Services for Digester Recirculation, Pumping, Heating and Mixing Systems, together with RCW 18.43 et seq., and 196 WAC-27A &29.

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It is unclear to the Court if Defendants are arguing that there are two standards of care, or that the standard of care does not require any written analysis. Either way, Plaintiffs three experts; Dr. Moncarz and Mr. Brugger, who conducted the city's post accident investigation, and Dr. Gill, testified that a written analysis of any changes in the operation of sludge transfers between digesters was required by the standard of care for an engineer when the skillet blocked off a draw-off valve. The two defense experts, Craig Chambers and Blake Anderson, both said that a written analysis was not required by the standard of care. Plaintiffs suggest that their experts should be given the greater weight since they were the authors of the Exponent report commissioned by the city after the digester collapse and Dr. Gill teaches engineers their professional responsibility. They argue they have the greater expertise and a greater understanding between the various disciplines of engineering and the interplay with plant operators. The Defendants disagree and contend their experts should be given greater weight since they have actually designed and been responsible for design, construction, maintenance, and operation of a waste water treatment plant. Further, Defendants point out that Exponent did not list the lack of a written analysis by the project engineer as one of the causes of the dome collapse. The Exponent experts counter that they were not asked to find fault but only causes and that one of the causes they found was operator confusion on valving after the skillets were installed. This, the Exponent experts say was caused by the lack of a written analysis. They are also critical that much of, if not all, information on operation changes is oral and not written. It is clear that post-skillet some operators knew how to properly change valves for a sludge transfer and others did not. There were no written SOPs on valving changes and no consistent training of operators from shift to shift. While these deficiencies are mostly the fault of the City, a written analysis by the Defendant engineers would, according to Plaintiffs' expert witnesses, trigger the

City's duty to prepare written SOPs, tagging of valves and consistent training. If the City failed to act upon Defendants' written analysis, then clearly that would be the fault of the City and the Defendants would have discharged their duty. As Dr. Moncarz testified, "you can't force your client to take your advice."

The record also reflects that this was not just an isolated idea born of one single brainstorming session ("BS"). Exhibit 4 is the contract between the Defendant and the City which modified the original contract. It is dated 3/11/03 and called for "on-call" engineering services for plant operations #6; Digester Dome rehab#13; Digester Recirculation System Upgrade #16 This included conceptual design such as installing a valve (skillet) to separate the recirculation sludge from the raw feed sludge to maintain proper heat in the digester.

Taking these clauses together this Court finds that Defendant's scope of work was more than a single BS session idea and was more than a mere suggestion on operation. Rather, it was a preliminary design concept that addressed a very real problem covered by the contract of 3/11/03. Defendants' notes of meetings bears this out (Exhibit 6 to 11 and 15 and 16), all well before the 5-3-04 meeting where skillets were discussed in the "BS" session. The Court finds this was an interim fix to a complicated piping system that had to remain operational. Knowing what Defendant's knew of plant operations required a written analysis of the effect of the piping and valving modification. Defendants can not simply discharge their standard of care by asking John King, "Is there anything else?" Kelly Irving was the program manager for CH2M Hill at the plant and he was to manage all design projects and changes. His engineering advice may have been sought on an "on-call" basis, but that does not affect the scope of the work nor the standard of care in which he was to perform as an engineer.

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BREACH

This Court finds that the suggestion of the valve for separation was more than a mere suggestion and was design engineering, and adopts the opinions of Plaintiffs' experts that a written analysis of the effects of the skillet installation on operation was required as part of Defendants' standard of care and was within the scope of their contract for services. Exhibit 18, the Plant Supervisor's meeting shows that the "Digester recirc piping reroute" was a High priority for the Defendants and was within their scope of services. As such Defendants' had a duty to Plaintiffs and they breached their duty by not having such an analysis. This was more than an "operational tweak" as Craig Chambers called it. This was a "responsibility that can't be transferred to a non engineer" per the testimony of Gary Brugger.

The failure to have a written analysis regarding the effect on operations due to an interim change in piping flow and valving is a breach of Kelly Irving's standard of care; it is not the degree of skill and diligence normally employed by professional engineer performing the same or similar services at the time services were performed by Kelly Irving in May 2004.

In final argument Plaintiffs argued that neither Mr. Pelton, the plant Superintendant, nor Mr. Gavin, the operations supervisor, nor Mr. King, the maintenance supervisor, knew or were aware that the installation of the skillets would change valving used by the City plant operators for pumped transfers between the digesters, specifically the valving used for a pumped transfer of sludge from digester 3 to 2. This is only partially true. Mr. King has changed his testimony on this point and I find that his testimony on this point is not reliable. If the Superintendant and the supervisors did not understand there would be a change in operations and valving, how

could they train operators to make a change? They could not. This underscores the importance of a written analysis by Mr. Irving.

CAUSATION

The Exponent Report to the City on the cause of the Dome Failure (Exhibit 71) lists three causes for the tragedy: Overflow closure; Emergency sludge transfer failure and; SCADA Detection Failure. Blake Anderson, Defendant's expert, states that the causes were: 1) The safety overflow valve was capped off; 2) The supernatant tree valves were closed; 3) In violation of a standing order not to fill the digesters beyond the 28 foot level, the day of the accident there were orders to fill Digester #3 beyond that level; 4) The SCADA readings were wrong; 5) The operators failed to transfer sludge out of Digester #3; 6) The raw feed of sludge to digester #3 was not shut off; 7) The operators did not take some other measure to transfer sludge out of Digester #3, such as a gravity transfer to another digester or to an empty unused tank. Mr. Anderson disagreed with the Exponent report that operator confusion due to the skillet installation was a cause. He opined the operators simply made a mistake. It is important to note that the pumped transfer on May 10th was the first pumped transfer from Digester #3 to #2 since the installation of the skillets. Mr. Anderson further opined that if any one of his seven causes was not present, the failure would not have occurred; in other words, this was a PERFECT STORM of events, all caused by the City's negligence. His causes 5, 6, and 7 are operator errors that had not occurred in the past. That certainly demonstrates confusion to this Court and its finding is the transfer failed due to Operator Confusion.

The question is not were they confused but why were they confused? Is it because the City had a lax oral training method for example or was it because no one, especially the defendant engineers, realized the effect the skillet would have on operations? This was not

simply a mistake or combination of mistakes. Pages 66 and 67 of the Exponent report contains a list of problems in the method of operation of the valves by the operators and the added confusion after the skillets changed the valves to effect a transfer one of which stated; "A large component of the confusion was the requirement to close a valve that was typically always open in order to transfer sludge out of a digester using the recirculation pumps." The Court believes the confusion is both the City's negligence and the negligence of the Defendants.

In closing argument, defense counsel said all of the causes listed by Mr. Anderson were the City's negligence and were all superseding causes to any possible negligence of the Defendants. The Court has determined that the Defendants breached their duty by violating their standard of care. The question now is whether the admitted City negligence is a superseding cause? The analysis is not necessarily on a time line. This Court has given juries WPI 15.04 and 15.05 on many occasions in the past. Since the Court is now the fact finder in this case it bears its careful attention.

WPI 15.04: "There may be more than one proximate cause of the same (event) ...it is not a defense that the act of some other person who is not a party to this lawsuit may also have been a proximate cause..."

WPI15.05: "If you find that the defendant was negligent but that the sole proximate cause of the event was a later independent act of a person not a party to this action that the defendant, in the exercise of ordinary care, could not reasonably have anticipated, the defendant's original negligence is superseded by the intervening act and is not a proximate cause of the injury. If however, in the exercise of ordinary care, the defendant should reasonably have anticipated the intervening act, it does not supersede defendant's original negligence and defendant's negligence is a proximate cause. It is not necessary that the sequence of events or

the particular resultant injury be foreseeable. It is only necessary that the resultant injury fall within the general field of danger which the defendant should reasonably have anticipated"

In this case, could Defendants have foreseen that the absence of an analysis of the skillet installation could have confused the operators such that they would fail to effectuate a transfer from digester #3 to digester #2 or #1? The Court finds the answer to this question is clearly yes. The very purpose of an analysis is to alert users of the client's plant that things are different. This can not be passed off to a client's employee who is a non-engineer, regardless of the degree of confidence in such employee. The Court finds there is no superseding intervening cause to the dome failure of digester #3.

For four weeks this trial focused on the cause of the dome failure and who was at fault. Defendants' also contend that the City is still at fault because of the superseding intervening cause of Superintendent Pelton ordering plaintiffs Cmos and Evans on to the roof of the digester to divert overflow by putting a hose over a downspout. This conduct has nothing to do with the cause of the overflow but how two of the Plaintiffs were placed in a dangerous situation that caused injury and death. This, the Defendants contend, is an intervening cause of the injury to Mr. Evans and death and Mr. Cmos.

What did Tim Pelton know about the situation when he ordered Cmos and Evans onto the roof? He testified that there had never been a dome failure before but there had been foaming incidents before. On May 10th he had been at another part of the plant and was alerted by another employee, Bob Darlick, who reported seeing material running down the dome and out a drain hole. Mr. Pelton went to the patio area and said he tried to contain it on the ground. He didn't hear anyone say don't go up on top of the dome or get off. He did not know the level in the digester. He did not know of a SCADA malfunction. He did not know the supernatant tree

valves were closed. He did not know the operators were confused on transfers. He did not know the operators had not stopped the raw feed into digester #3. He did not know that what he was looking at was not just foam but real sludge. From his lack of knowledge of these things, his negligence, if any, is not a superseding intervening cause of the Plaintiffs' injuries from the dome failure.

DAMAGES

Defendants contested liability but did not contest damages, neither in testimony nor in argument. Having found Defendants liable, the special damages are hereby awarded the respective plaintiffs. The general damages are more difficult.

Mike Cmos arguably suffered one of the most disgusting and terrible deaths imaginable. His last two minutes of life were surrounded in darkness pain and utter helplessness. Counsel argues that fair compensation for this is not less than two million dollars. This Court agrees and awards the Estate of Mike Cmos the sum of two million six hundred sixty five dollars ($2,665,000.00).

Kathy Cmos lost her husband, lover and best friend and the evidence showed they were a very happy couple with years to enjoy each other. Evidence of her life since Mike's death shows she has chosen to withdraw to nurture her daughter, Jen. This Court finds that the memory of how her life was with Mike Cmos; the way in which Mike Cmos died and the grief she shared with her daughter is an immeasurable loss. Therefore Ms. Cmos is awarded two million dollars ($2,000.000.00) as general damages for this loss.

Jen Cmos lost her dad at age 12. He was her fishing partner, counselor, problem solver and comforter. Not all 12 year-old girls are lucky enough to have that kind of relationship with their father. The evidence shows that she has adjusted fairly well considering her loss. She will never be able to forget the closeness she felt from her Dad which she will never feel again. This

Court awards the sum of six hundred and fifty thousand dollars ($650,000.00) as general damages.

Dan Evans sustained a severely fractured pelvis, a broken tibia, five broken ribs and two fractured vertebrae. He also ingested human waste and aspirated it as well. He continues to have pain from his fractures and also suffers from pulmonary as well as gastro-intestinal problems. Mr. Evans suffers from Post Traumatic Stress Disorder (PTSD). He walks with a limp. He is back to work but is no longer able to coach. He has gotten married since the accident. In addition to the special damages previously awarded to him, this Court awards for general damages the sum of one million dollars ($1,000.000.00).

Larry Michaels sustained leg injuries when he was hit with a wall of sludge. His medical bills are over $30,000.00 but more significantly he also suffers from PTSD and depression. This has affected his marriage and his general demeanor. However, he has a new job running smaller waste water treatment plants which his wife says he loves. This Court awards Mr. Michaels general damages in the amount of two hundred and fifty thousand dollars, ($250,000.00). It also awards general damages in the amount of fifty thousand dollars ($50,000.00) to his wife, Debbie Michaels. The Court does not recall any specific evidence of costs for future medical treatment for either Mr. Evans or Mr. Michaels, therefore non are awarded.

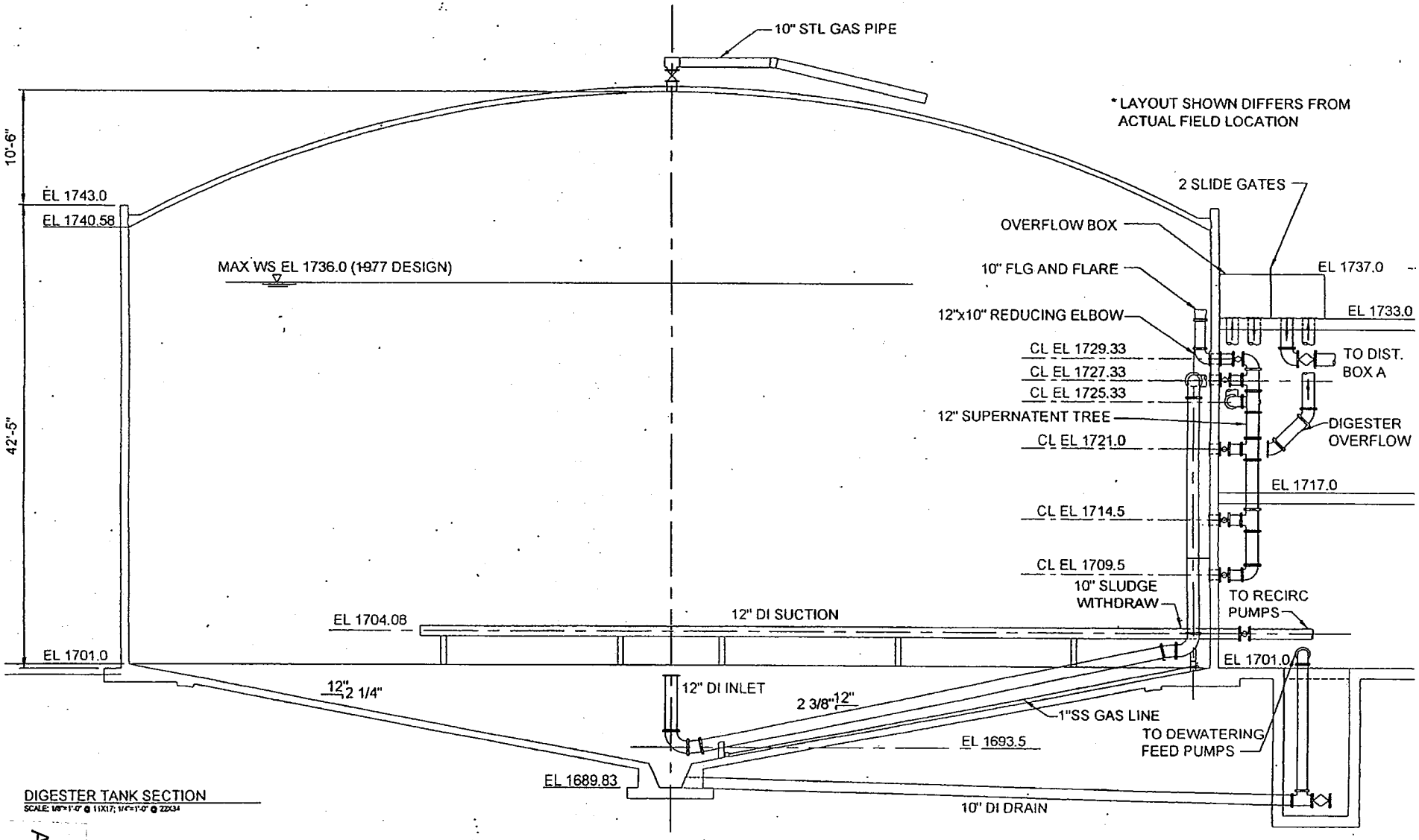
Counsels are requested to submit for signature findings of fact, conclusions of law in conformance with the foregoing.

Dated at Spokane, Washington September 17, 2008.

Judge

Disclaimer
This is not a Legal Document.
The information shown on this map is compiled from various sources and is subject to constant revision. Information shown on this map should not be used to determine the location of facilities in relationship to property lines, section lines, streets, etc.
Digital Orthophoto Data Base ©
2001, 2002 AVIGTAK Utilities
All Rights Reserved
Spokane FIRE DEPARTMENT
Advanced Waste Water Treatment Plant (AWWTP) Facility
100 Feet
Legend
2002 Orthophotography
Created: 05/20/04
By: A. Schmidt
Path: M:\40\gis\data\city\fire\projects\awwtp_digestors.mxd

Appendix C



DIGESTER TANK SECTION

SCALE: 1/8"=1'-0" @ 11X17; 1/4"=1'-0" @ 22X34

DT

APPENDIX D

Engr. & Eng. Svcs.
Submitting Department

Tom Arnold
Contact Person

6270
Phone Ext.

CH2M HILL / SPK
RECEIVED
SEP 17 1998

SPOKANE

CONSENT AGENDA
✓ Contract
eport

LEGISLATIVE SESSION
0 Resolution
0 Emergency Ordinance
0 Final Reading Ordinance
0 First Reading Ordinance
0 Special Consideration
0 Hearing

COUNCIL PRIORITY
0 Communications
0 Cultural Diversity & Racial Equity
0 Economic Development
0 Growth management
✓ Infrastructure
0 Neighborhoods
0 Public Safety
0 Service Delivery

Clerk's Files: # OPR 98-719
Renews: #
Cross Reference: #
ENG/LID: # 98058
BID: #

NEIGHBORHOOD/COMMISSION/COMMITTEE NOTIFIED BY SUBMITTING DEPARTMENT:

Public Works Committee Area Manager:

Action Taken : Approved

AGENDA WORDING: Authorization to enter into an eight-year contract with CH_2M Hill, Inc. (consultant) to provide overall program management for the City's 10-year capital improvement program at the Advanced Wastewater Treatment Plant (AWWTP). The contract for the remaining FY "98" and FY "99" will be $1,387,850.00 The 10-year contract is not to exceed $4,676,000 for services described under the scope of work. Review and renewal of this contract and the associate scope of work shall be presented to Council for approval annually.

BACKGROUND: (See Attached Sheet)

RECOMMENDATION: Approve

FISCAL IMPACT: Expenditure - $1,387,850 - Fiscal Year "98/99" Budget Account # 437 8369 695 63510

ST ATTACHMENTS AS FOLLOWS:
On file for review in Office of City Clerk: Contract

SIGNATURES OF SUBMITTING OFFICERS:

Capital Programs Engineer

Asst. City Manager - Operations

Finance

Legal

Director, Wastewater Management

City Manager

DISTRIBUTION AFTER COUNCIL ACTION:
Capital Programs Development
Construction Services
Wastewater Management
Budget Control
Accounting

COUNCIL ACTION:

APPROVED BY
SPOKANE CITY COUNCIL:
September 21, 1998
Jessi [illegible]
CITY CLERK

APPENDIX E

Agenda 98058
September 28, 1998

Background: In response to the City of Spokane's commitment to meet water quality standards at the AWWTP as required by the Department of Ecology and National Pollution Discharge Elimination System (NPDES) permit, a 10-year capital improvement program (est. $65M) was initiated by Wastewater Management. The improvements include upgrade of existing facilities as well as expansion of treatment processes in order to maximize the site.

In order to facilitate the management of this significant capital program, a Project Management Office (PMO) was initiated with the concurrence of the Public Works Committee. Through a competitive and extensive selection process, CH_2M Hill was selected as the most qualified consulting engineering firm to manage this program. The 10-year program is anticipated to be completed by 2006 (8 years) as two capital projects at the AWWTP were started in 1996 and are already under construction. This contract is intended to be renewed annually with a maximum budget not to exceed $4,676,000 over the next 8 years. The agreed to FY "98" and FY "99" budget is $1,387,850 (30%).

The PMO (CH_2M Hill) will provide overall program administration as well as conceptual and preliminary engineering design. The remainder of all design and construction management engineering services will be contracted with others. CH_2M Hill, by contract, is not eligible to receive any of this additional work.

The PMO office budget represents approximately 25% of the total $18M engineering services anticipated for this 10-year program. The remaining 75% will be contracted to other engineering firms on a competitive basis over the next several years.

STANDARD CONSULTANT AGREEMENT		CONSULTANT/ADDRESS/TELEPHONE *CH2M HILL* *9 South Washington, Suite 400* *Spokane, Washington99201* *(509) 747-2000*	
AGREEMENT TYPE check one	☐ LUMP SUM LUMP SUM _____	PROJECT TITLE AND WORK DESCRIPTION *Spokane Advanced Wastewater Treatment Plant* *Project Management Office (PMO)*	
	■ COST PLUS FIXED FEE OVERHEAD PROGRESS PAYMENT RATE 100% OVERHEAD COST METHOD ☐ ACTUAL COST ____% ☐ ACTUAL COST NOT TO EXCEED ____% ■ FIXED RATE 168% ■ FIXED FEE 32%	*Provide overall program management and preliminary & conceptual engineering service for the City's 10 year treatment plant CIP.*	
		MBE PARTICIPATION ☐ YES ■ NO WBE PARTICIPATION ☐ YES ■ NO	
		FEDERAL ID NO. *93-0723698*	Do you require a 1099 for IRS? ■ YES ☐ NO
	☐ SPECIFIC RATES OF PAY ☐ NEGOTIATED HOURLY RATE ☐ PROVISIONAL HOURLY RATE	COMPLETION DATE *December 31, 1999*	MAXIMUM AMOUNT PAYABLE (98-2006) $4,676,670.00 FY "98/99" $1,387,850.00
	■ COST PER UNIT OF WORK		

THIS AGREEMENT, made and entered into on this _____, day of _____, 1998, between the CITY OF SPOKANE, WASHINGTON, hereinafter called the "Agency," and the above organization, hereinafter called the "Consultant."

WITNESSETH THAT:

WHEREAS, the Agency desires to accomplish the above referenced project; and

WHEREAS, the Agency does not have sufficient staff to meet the required commitment and therefore deems it advisable and desirable to engage the assistance of a Consultant to provide the necessary services for the Project; and

WHEREAS, the Consultant represents that it is in compliance with the Washington State statutes relating to professional registration, if applicable, and has signified a willingness to furnish consulting services to the Agency;

NOW, THEREFORE, The parties agree as follows:

I.
GENERAL DESCRIPTION OF WORK

The work under this Agreement shall consist of the above described work and services as herein defined and necessary to accomplish the completed work for this Project. The Consultant shall furnish all services, labor and related equipment necessary to conduct and complete the work as designated elsewhere in this Agreement.

II.
SCOPE OF WORK

This Scope of Work and project level of effort for this project is detailed in the attached Exhibit B, which is made a part of the Agreement.

III.
GENERAL REQUIREMENTS

All aspects of coordination of the work of this Agreement, with outside agencies, groups or individuals shall receive advance approval by the Agency. Necessary contacts and meetings with agencies, groups or individuals shall be coordinated through the Agency.

The Consultant shall attend coordination, progress and presentation meetings with the Agency or such federal, community, state, city or county officials, groups or individuals as may be requested by the Agency. The Agency will provide the Consultant sufficient notice prior to meetings requiring Consultant participation. The minimum number of hours or days notice required shall be agreed to between the Agency and the Consultant and shown in Exhibit B. The Consultant shall prepare a monthly progress report, in a form approved by the Agency, that will outline in written and graphical form the various phases and the order of performance of the work in sufficient detail so that the progress of the work can easily be evaluated. Goals for Minority Business Enterprises (MBE), and Women Owned Business Enterprises (WBE) if required, shall be shown in the heading of this Agreement.

The original copies of all reports, PS&E materials, and other data, furnished to the Consultant by the Agency shall be returned. All designs, drawings, specifications, documents, and other work products of the Consultant are instruments of service for this Project and are the property of the Agency, whether the Project is completed or not. Reuse by the Agency or by others acting through or on behalf of the Agency of any such instruments of service not occurring as a part of this Project, shall be without liability or legal exposure to the Consultant.

IV.
TIME FOR BEGINNING AND COMPLETION

The Consultant shall not begin work under the terms of this Agreement until authorized in writing by the Agency. All work under this Agreement shall be completed by the date shown in the heading of this Agreement under completion date.

The established completion time shall not be extended because of any delays attributable to the Consultant, but may be extended by the Agency in the event of a delay attributable to the Agency or because of delay caused by an act of God or governmental actions or other conditions beyond the control of the Consultant. A prior supplemental agreement issued by the Agency is required to extend the established completion time. The supplemental agreement to extend the completion time shall not be unreasonably withheld by the Agency.

V.
PAYMENT

The Consultant shall be paid by the Agency for completed work and services rendered under this Agreement as provided in the attached Exhibit C, which is made a part of the Agreement. Such payment shall be full compensation for work performed or services rendered and for all labor, materials, supplies, equipment, and incidentals necessary to complete the work specified in Section II, "Scope of Work."

VI.
SUBCONTRACTING.

The Agency permits subcontracts for those items of work as shown in the attached Exhibit G, which is made a part of this Agreement. The parties understand that subcontractors may be added or deleted during the course of the Agreement. Exhibit G may be amended as the need arises, upon mutual agreement of the parties, without a formal amendment to this Agreement.

Compensation for this subconsultant work shall be based on the cost factors shown in Exhibit G.

The work of the subconsultant shall not exceed its maximum amount payable unless a prior written approval has been issued by the Agency.

All reimbursable direct non-salary costs for the subconsultant shall be substantiated in the same manner as outlined in Section V. All subcontracts exceeding $10,000 in cost shall contain all applicable provisions of this Agreement.

The Consultant shall not subcontract for the performance of any work under this Agreement without prior written permission of the Agency. No permission for subcontracting shall create, between the Agency and subcontractor, any contract or any other relationship.

VII.
EMPLOYMENT

The Consultant warrants that it has not employed or retained any company or person, other than a bona fide employee working solely for the Consultant, to solicit or secure this Agreement and that it has not paid or agreed to pay any company or person, other than a bona fide employee working solely for the Consultant, any fee, commission, percentage, brokerage fee, gift or any other consideration, contingent upon or resulting from the award or making of this Agreement. For breach or violation of this warrant, the Agency shall have the right to annul this Agreement without liability, or in its discretion to deduct from the Agreement price or consideration or otherwise recover, the full amount of such fee, commission, percentage, brokerage fee, gift or contingent fee.

Any and all employees of the Consultant, or other persons, while engaged in the performance of any work or services required of the Consultant under this Agreement, shall be considered employees of the Consultant only and not of the Agency and any and all claims that may or might arise under the Workman's Compensation Act on behalf of said employees, while so engaged and any and all claims made by a third party as a consequence of any act or omission on the part of the Consultant's employees, or other persons while so engaged on any of the work or services provided to be rendered herein, shall be the sole obligation and responsibility of the Consultant.

The Consultant shall not engage, on a full or part-time basis, or other basis, during the period of the Agreement, any professional or technical personnel who are, or have been at any time during the period of the Agreement, in the employ of the Agency, except regularly retired employees, without written consent of the Agency.

VIII.
NON-DISCRIMINATION

The Consultant agrees not to discriminate against any client, employee or applicant for employment or for services because of race, creed, color, national origin, martial status, sex, age, or handicap except for a bona fide occupational qualification with regard to, but not limited to the following: employment upgrading; demotion or transfer; recruitment or any recruitment advertising; layoff or terminations; rates of pay or other forms of compensation; selection for training; rendition of services. The Consultant understands and agrees that if it violates this provision, this Agreement may be terminated by the Agency.

IX.
TERMINATION OF THE AGREEMENT

The right is reserved by the Agency to terminate this Agreement in whole or in part at any time upon 10 days' written notice to the Consultant.

Cost Plus Fixed Fee Contracts: If this Agreement is terminated in its entirety by the Agency other than for fault on the part of the Consultant, a final payment shall be made to the Consultant which, when added to any payments previously made, shall total the actual costs plus the same percentage

of the fixed fee as the work completed at the time of termination is to the total work required for the Project. In addition, the Consultant shall be paid for authorized extra work completed. If the Agreement is terminated in part, payment shall be made to the Consultant for the actual costs incurred for deleted work at the time of termination plus the same percentage of the fixed fee as the work completed at the time for termination. Provided, however, that no percentage of the fixed fee will be paid on uncompleted work deleted by the termination.

No payment shall be made for any work completed after 10 days following receipt by the Consultant of the Notice to Terminate. If the accumulated payment made to the Consultant prior to Notice of Termination exceeds the total amount that would be due computed as set forth herein above, then no final payment shall be due and the Consultant shall immediately reimburse the Agency for any excess paid.

In the event the services of the Consultant are terminated by the Agency for fault on the part of the Consultant, the above stated formula for payment shall not apply. In such an event, the amount to be paid shall be determined by the Agency with consideration given to the actual costs incurred by the Consultant in performing the work to the date of termination, the amount of work originally required which was satisfactorily completed to date of termination, whether that work is in a form or a type which is usable to the Agency at the time of termination; the cost to the Agency of employing another firm to complete the work required and the time which may be required to do so, and other factors which affect the value to the Agency of the work performed at the time of termination. Under no circumstances shall payment made under this subsection exceed the amount which would have been made using the formula set forth in the previous paragraph.

If it is determined for any reason that the Consultant was not in default or that the Consultant's failure to perform is without it or it's employees' fault or negligence, the termination shall be deemed to be a termination for the convenience of the Agency in accordance with the provisions of this Agreement.

In the event of the death of any member, partner, or officer of the Consultant or any of its supervisory personnel assigned to the Project, or, dissolution of the partnership, termination of the corporation, or disaffiliation for the principally involved employee, the surviving members of the Consultant hereby agree to complete the work under the terms of this Agreement, if requested to do so by the Agency. The subsection shall not be a bar to renegotiation of the Agreement between the surviving members of the Consultant and the Agency, if the Agency so chooses.

In the event of the death of any of the parties listed in the previous paragraph, should the surviving members of the Consultant, with the Agency's concurrence, desire to terminate this Agreement, payment shall be made as set forth in the second paragraph of this section.

Payment for any part of the work by the Agency shall not constitute a waiver by the Agency of any remedies of any type it may have against the Consultant for any breach of this Agreement by the Consultant, or for failure of the Consultant to perform work required of it by the Agency. Forbearance of any rights under the Agreement will not constitute waiver of entitlement to exercise those rights with respect to any future act or omission by the Consultant.

X.
CHANGES IN WORK

The Consultant shall make all such changes and revisions in the completed work of this Agreement as are necessary to correct the Consultant's errors appearing therein, when required to do so by the Agency, without additional compensation thereof. Should the Agency find it desirable for its own purposes to have previously satisfactorily completed work or parts thereof changed or revised, the Consultant shall make such revision, if required and as directed by the Agency. This work shall be considered as extra work and will be paid for as herein provided under Section XIV.

XI.
DISPUTES

Any dispute concerning questions of facts in connection with the work not disposed of by Agreement between the Consultant and the Agency shall be referred for determination to the Assistant City Manager - Operations, whose decision in the matter shall be final and conclusive on the parties of this Agreement, provided, however, that if an action is brought challenging his/her decision, that decision shall be subject to de novo judicial review.

XII.
VENUE, APPLICABLE LAW AND PERSONAL JURISDICTION

In the event that either party deems it necessary to institute legal action or proceedings to enforce any right or obligation under this Agreement, the parties agree that any such action shall be initiated in the Superior Court of the State of Washington, situated in Spokane County. The parties agree that all questions shall be resolved by application of Washington law and that the parties to such action shall have the right of appeal from such decisions of the Superior Court in accordance with the laws of the State of Washington. The Consultant consents to such jurisdiction.

XIII.
LEGAL RELATIONS AND INSURANCE

The Consultant shall comply with all federal, state and local laws and ordinances applicable to the work to be done under this Agreement. This Agreement shall be interpreted and construed in accordance with the laws of Washington.

The Consultant hereby agrees to indemnify and hold the Agency and their officers and employees harmless from and shall process and defend at its own expense all claims, demands, or suits at law or equity arising from the Consultant's negligence or breach of any of its obligations under this Agreement; provided that nothing herein shall require the Consultant to indemnify the Agency against and hold harmless the Agency from claims, demands or suits based solely upon the conduct of the Agency, their agents, officers and employees. If the claims or suits are caused by or result from the concurrent negligence of (a) the Consultant's agents or employees and (b) the Agency, its agents, officers and employees, the loss, cost, or expenses shall be shared between the Consultant and the Agency in proportion to the relationship. This indemnity provision with respect to (1) claims or suits based upon such negligence, (2) the costs to the Agency of defending such claims and suits, etc.; shall be valid and enforceable only to the extent of the Consultant's negligence or the

negligence of the Consultant's agents or employees.

Additional terms and conditions can be found in the attached Exhibit I, which is made a part of this Agreement.

The Consultant's relation to the Agency shall be at all times as an independent contractor.

The Consultant specifically assumes potential liability for actions brought by the Consultant's own employees against the Agency and, solely for the purpose of this indemnification and defense, the Consultant specifically waives any immunity under the state industrial insurance law, Title 51 RCW. The Consultant recognizes that this waiver was specifically entered into pursuant to the provisions of RCW 4.24.115 and was the subject of mutual negotiation.

The Agency will pay no progress payments under Section V until the Consultant has fully complied with this section. This remedy is not exclusive; and the Agency may take such other action as is available to them under other provisions of this Agreement, or otherwise in law.

The Consultant shall obtain and keep in force during the term of the Agreement, or as otherwise required, the following insurance with companies or through sources approved by the State Insurance Commissioner pursuant to Title 48 RCW.

The Consultant represents that it and its employees, agents and subcontractors, in connection with the performance of the Agreement, are protected against the risk of loss by the following insurance coverages:

A. Worker's Compensation Insurance to the statutory limits and Employers Liability Insurance in the amount of $500,000;

B. Commercial General Liability Insurance, including Business Automobile Insurance coverage, in the amount of $1,000,000 combined single limit, on the occurrence form, and naming the City of Spokane as an Additional Insured. The policy shall be primary to any policy which the City may otherwise carry ("Primary Coverage"), and treat the employees of the City in the same manner as members of the general public ("Cross-liability Coverage");

C. Errors and Omissions insurance in the amount of $1,000,000, unless the Errors and Omissions coverage is included in the General Liability policy.

The above policies shall be issued by companies that with the approval of the City Risk Manager. The policies shall not be canceled without at least 30 days' written notice to the City as Additional Insured. The Consultant shall provide proof of insurance coverage prior to beginning performance of the Agreement through a Certificate of Insurance and copies of policy endorsements demonstrating the Additional Insured Coverage and Primary Coverage. The certificate and policy endorsements shall be sent to the department representative and are subject to review and approval by the City Risk Manager.

XIV.

XIV.
EXTRA WORK

A. The Agency may at any time, by written order, make changes within the general scope of the Agreement in the services to be performed.

B. If any such change causes an increase or decrease in the estimated cost of, or the time required for, performance of any part of the work under this Agreement, whether or not changed by the order, or otherwise affects any other terms and conditions of the Agreement, the Agency shall make an equitable adjustment in the (1) maximum amount payable; (2) delivery or completion schedule, or both; and (3) other affected terms and shall modify the Agreement accordingly.

C. The Consultant must submit any "proposal for adjustment" (hereafter referred to as proposal) under this clause within 30 days from the date of receipt of the written order. However, if the Agency decides that the facts justify it, the Agency may receive and act upon a proposal submitted before final payment of the Agreement.

D. Failure to agree to any adjustment shall be a dispute under the Disputes clause. However, nothing in this clause shall excuse the Consultant from proceeding with the Agreement as changed.

E. Notwithstanding the terms and conditions of paragraphs (A) and (B) above, the maximum amount payable for this Agreement, shall not be increased or considered to be increased except by specific written supplement to this Agreement.

XV.
ENDORSEMENT OF PLANS

The Consultant shall place its endorsement on all plans, estimates or any other engineering data furnished by it.

XVI.
CERTIFICATION OF THE CONSULTANT AND THE AGENCY

Attached hereto as Exhibit A-1 the Certifications of the Consultant and the Agency, Exhibit A-2 Certification regarding debarment, suspension and other responsibility matters -- primary covered transactions, Exhibit A-3 Certification regarding the restriction of the use of federal funds for lobbying, and Exhibit A-4 Certificate of Current Cost or Pricing Data. Exhibits A-3 and A-4 are required in Agreements over $100,000.00 with Federal funding.

XVII.
COMPLETE AGREEMENT

This document and referenced attachments contains all covenants, stipulations, and provisions agreed upon by the parties. No agent, or representative of either party has authority to make, and the parties shall not be bound by or be liable for, any statement, representation, promise, or agreement not set forth herein. Except as provided for in Section VI, no changes, amendments, or modifications of the terms hereof shall be valid unless reduced to writing and signed by the parties as an amendment to this Agreement.

XVIII.
EXECUTION AND ACCEPTANCE

This Agreement may be simultaneously executed in several counterparts, each of which shall be deemed to be an original having identical legal effect. The Consultant does hereby ratify and adopt all statements, representations, warranties, covenants, and agreements contained in the proposal, and the supporting materials submitted by the Consultant, and does hereby accept the Agreement and agrees to all of the terms and conditions thereof.

Signed by the parties on the date first set forth above.

CITY OF SPOKANE

By: Peter G. Forteri
for City Manager

Attest: Terri L. Pfister
City Clerk

DATE: October 6, 1998
I HEREBY CERTIFY THIS IS A TRUE AND ACCURATE COPY OF THE ORIGINAL WHICH IS ON FILE IN THE OFFICE OF THE CITY CLERK.
Terri L. Pfister
CITY CLERK
SEAL: CITY OF SPOKANE
COUNTY OF SPOKANE
STATE OF WA.

CH2M Hill

Federal Tax I.D. No. 93-0723698

City of Spokane Business License No.
L9804650 (1-12-99)

By: James S. Cowell

Title: VP

Approved as to form:

B. Burns
Assistant City Attorney

Exhibit B
Spokane Advanced Wastewater Treatment Plant
Program Management Office (PMO)
Scope of Services

I. General Information

A. Project Description

The City of Spokane is embarking on a comprehensive, integrated program of capital improvements for its wastewater conveyance and treatment facilities. That program is divided into 2 tracks: treatment and collection. The overall capital improvement plan, as presently envisioned, is presented in the current Wastewater Facilities Plan, Combined Sewer Overflow Reduction Plan and will be supplemented by the completion of the Storm Water Management Plan.

The treatment track, which is the initial focus of this agreement, will be carried out over a 8 year period. Upon completion it is intended that the Spokane Advanced Wastewater Treatment Plant (SAWTP) will meet all applicable State and Federal wastewater discharge parameters based on flows projected at least through the year 2015.

CH2M HILL will establish a Program Management Office (PMO) providing all of the technical resources and staff necessary to manage the complete treatment track capital improvement program in close cooperation with the City's Wastewater Management Department and Capital Programs Office.

B. Scope of Services -Organization

This scope of services is organized into several major activities. Overall program administration encompasses both General Administration and Design and Construction Administration. Program Engineering includes conceptual and preliminary design. In addition to the program activities above, Additional Services are identified which are defined as related site specific studies or information necessary to assist the City. The City is currently proceeding with purchase of three (3) new Belt Filter Presses. Design and construction management services for this new equipment are discussed in the last section of the Scope of Services. In summary, this Scope of Services is organized into the following major sections:

- I. General Information
- II. General Administration
- III. Program Engineering
  - Conceptual Design
  - Preliminary Design
- IV. Design and Construction Administration
- V. Additional Services
- VI. Belt Filter Presses Design and CM

C. Overall Objectives

The overall objective of the PMO is to coordinate and direct all planning, design, and construction activities to ensure that the SAWTP improvements are completed within the City's established budget and time frame while simultaneously maintaining continuous, ongoing operation of the plant in compliance with its National Pollutant Discharge Elimination System (NPDES) permit.

A related objective is to assist the City, when requested, with ancillary programs that could impact the future SAWTP improvement program. If requested by the City, the scope of work and budget for ancillary programs will be negotiated separately.

D. General Assumptions

Successful performance of the PMO project will depend on clear lines of communication and close, continuous coordination between the City's Management Team and the PMO team. The key members of the PMO team include:

Name	Project Title	Primary Responsibility
Jim Correll (CH2M HILL)	PMO Director	Program leadership and administration of the PMO.
		Daily coordination with City's designated program liaison.
Dave Reynolds (CH2M HILL)	Engineering Manager	Performance of conceptual and preliminary design services.
		Quality control of final design
Dick Day	Construction Manager	Overall management of construction Services
John Spencer (CH2M HILL)	Senior Advisor	Management policy assistance

These four individuals are committed to the PMO project for its duration. If unforeseen, circumstances should arise that necessitate replacement of any of these people, the City's management team will participate in the evaluation and selection of replacement candidates with full authority for final acceptance or rejection.

The City's key management team includes:

Name	Title	Project Responsibility
Gale Olrich	Wastewater Director	Overall program leadership.
		Policy establishment with PMO Director
Tim Pelton	SAWTP Superintendent	Coordination of design & construction with plant operational requirements

Gerry Shrope	Capital Programs Manager	Regular administrative coordination with the PMO Director
Tom Arnold	Capital Programs	Program Liaison
Dale Arnold	Envir. Programs Director	Regulatory interpretation & strategy
Larry Esvelt	Special Consultant	Technical advice and quality control

As with the PMO key team leadership, these six individuals have been assigned by the City to the PMO project for it's duration.

The PMO will not directly perform final design services or onsite materials testing and resident observation during construction, except in special circumstances when requested by the City. Rather, the PMO will lead the selection of qualified engineering firms to contract with the City to perform those services. It is intended that those firms selected to perform final design will also provide basic services during construction and onsite inspection. The selected final design and construction services firms will be managed by the PMO.

The entire program is to be completed by the end of the year 2006. The total budget for PMO services is based upon an estimated program capital budget of $58,324,000. This Agreement encompasses PMO services for the entire duration of the program. It is not possible at this time, to define detailed scope of work and associated budgets for the entire program. For this reason the program will be established on an annual basis and will cover the PMO costs each year. Consequently, Phase 1 (1998-99) scopes and budgets have been established to include only services through 1999 (refer to Exhibit D-1). The following table shows the estimated overall and Phase 1 PMO budgets:

PMO Activity	Program Percent	Overall PMO Budget	Phase 1 Budget
Program Administration	3.5%	$2,041,000	$ 306,000
Conceptual Design	1.5%	$ 875,000	$ 354,000
Preliminary Design	2.0%	$1,166,000	$ 330,000
Special Studies	0.6%	$ 354,000	$ 157,000
Belt Filter Press (Des/CM)	N/A	$ 240,000	$ 240,000
Totals		**$4,676,000**	**$1,387,000**

As the Phase 1 conceptual design work is completed , the scope of PMO services will become better defined and detailed work plans with specifically assigned tasks, levels of effort and budgets will be prepared. The PMO Activity budgets will then be adjusted accordingly and will be incorporated annual scope of work budgets. The intent is to not exceed the overall program budget upon completion. (refer to Exhibit D)

The PMO will be located at the SAWTP. The PMO will make all arrangements for acquisition and installation of trailer(s) at a suitable location at the plant. The program office will be wired to both the City and CH2M HILL's local area networks to expedite voice and data communication.

E. Procedures & Standards

The PMO will prepare all submittal documents in both hard copy and electronic format. All final design drawings will be submitted in the most current version of AutoCad and comply with applicable APWA and City drafting standards. Preliminary design plans, specifications and estimates will be prepared consistent with the standard practices of the City or CH2M HILL as represented by the 1997 aeration project. The PMO will prepare written standards for use by other firms who will perform final design and construction management.

Hard copy monthly status reports will be submitted to Capital Programs along with monthly invoices. A standard format will be developed jointly by the City and the PMO. At a minimum the monthly reports will address the status of funding, the budget and the schedule, including information on the status of important milestones and program progress.

The PMO Director and Engineering Manager will meet weekly with the Wastewater Director and other City Staff as designated by the City at a standard time at the PMO's office to discuss current project activities. These weekly meetings will be scheduled and managed to last one hour. On a set day and time once each month the weekly coordination meeting will be extended to two (2) hours in length to accommodate review of the overall program. As the program proceeds this schedule may be modified as necessary. It is expected to reduce in frequency over time.

The PMO's office will be set up to house all project hard copy documents and records. Electronic files will be maintained on the CH2M HILL file server, backed up weekly. Copies of electronic files will be transferred to the City when requested.

II. General Administration

A. Objectives

General administration provides the functional framework within which all of the other project activities must be performed. It is the overall objective of the administrative function to ensure that the various elements of the program are properly planned, performed and controlled so that the needs of the City and other program stakeholders will be met.

B. Assumptions

Team building will be conducted at the outset of the program to ensure a thorough understanding and endorsement by all major stakeholders of primary program elements, processes and goals. Team building will include all key PMO team members, the City's project management team, and selected representatives of Spokane County and the Department of Ecology. The process will be facilitated by a person with specialized expertise in team building techniques.

The projected program capital budget and cash flow for management, engineering, and construction will be monitored and updated by the PMO as new information is developed during conceptual design workshops. The current program budget is estimated to be $58,324,000.

It will be essential to develop detailed work plans for the various project activities so that project specific engineering budgets, levels of effort and schedules can be established, monitored and controlled. Work plans will be prepared for each conceptual design workshop. When a workshop is complete, a work plan will then be prepared for the development of the subsequent engineering analyses and report. When the engineering report is finalized, work plans will be prepared for recommended preliminary designs. When final design firms and CM firms are selected, each will be required to prepare and submit detailed work plans describing their respective tasks, estimated levels of effort, budgets and schedules for approval by the PMO with ultimate approval by the City Council.

PMO administration will be performed from the office at the SAWTP site. The program office will have a minimum staff of a clerical assistant. All invoicing, budget and schedule monitoring, status reporting, and records management will be conducted at that location. All weekly and monthly coordination meetings will also be held at the SAWTP. The program office will be the central clearing house for all submittals and shop drawings during final design and construction.

C. Work Tasks

Planning.

Team Building/Program Definition. The overall success of the program depends on establishing a working partnership between the PMO team, the City's wastewater management team, Spokane County and the Washington Department of Ecology. The

PMO will conduct a 3 day-long planning workshop to establish the partnership agreements and to define the goals of the program.

A trained facilitator will organize and conduct the first day of the workshop. The first day of the workshop will explore the needs of the program team members and will jointly develop a vision (goals and objectives) for the program within the boundaries of the 10 year CIP as established by the Facilities Plan. Key agreements will be established in the workshop.

The second day will be devoted to review and refinement of the order and schedule of the 10 year Capital Improvement Program. The third and final day of the workshop will then focus on refining the specific projects to be included in the Phase 1 improvement program.

Prior to day 1, the subject matter (Agendas) to be covered in the three (3) days of the team building workshop will be prepared by the PMO and reviewed and approved by the Director of Wastewater Management. Upon approval, the PMO will conduct the workshop and prepare a summary report for endorsement by all of the participants. Topics for the workshop may include the development of organizational and team expectations; a program mission statement; program goals & objectives; identification of team responsibilities; communication protocols; revision and endorsement of the 10 year program; and conflict resolution methodology.

Quality Assurance/Quality Control Plan. Develop a QA/QC protocol to insure consistency, quality and minimal unexpected work changes in the conduct of design and construction. This plan will also provide QA/QC in the development of plan documents.

Outline the processes to be embedded into the project to ensure that quality, integrity and value are maintained during all phases.

Work Plans. After the key stakeholders have endorsed the program, a comprehensive work plan will be prepared. This document will provide the overall guidelines and instructions for the team to follow in proceeding with the program. Subsequently, as specific project elements are identified to be performed, detailed work plans will be prepared governing the performance of those elements. The following topics will be addressed in each work plan:

- Project Definition. Prepare a description of the project objectives and establish their linkages to the project goal. Develop a contract scope statement describing the work that will need to be completed to achieve the project objectives. Link the 'work breakdown structure' for the project defined here, complete with deliverables and milestones, to the scope statement.
- Resources. Develop a detailed organizational chart, identifying all key team members and their respective roles. Define resources needed and allocate them to the itemized tasks based on the project schedule.
- Schedule. Develop a Master Schedule addressing the overall program goals and duration. Also, using Microsoft Project, create a detailed deliverable-based project specific schedule. Identify each task's duration, predecessors, constraints, linkages, deliverables, reviews, milestones, and completion date.
- Budget. Refine budgets for general administration, program engineering (conceptual and preliminary design), and design and construction administration.

Establish a planned rate of expenditure as one baseline criteria for evaluating progress.

- Project Instructions. Prepare concise, clear written instructions for the PMO team members that describe how the work will be carried out. The instructions will encapsulate the main elements of the work plan with a primary focus on procedures to be followed by team individuals in performing their respective tasks.

- Closure. Develop a plan that contains systematic procedures for phasing task closures, demobilizing staff and resources, closing technical elements, coordinating with the City Management Team, closing financial elements, and archiving materials.

Communications Plan. Develop a system designed to ensure continuous communications among the PMO staff, the City Management Team , Project Team members and the public. Incorporate the communication protocols established in the team building workshop. Describe who, how and when project communications take place. Describe routings, documentation format and specific filing systems.

Change Management Plan. Develop and describe the guidelines and processes the team will employ to manage changes as they are anticipated, leading to thorough and orderly disposition. In general, change management will address change identification, analysis of impacts, response strategy, communications, work plan revision, and monitoring of the outcome.

Performance

Team Organization & Leadership. The PMO will maintain the focus of the team members on satisfying:1) the project purpose; goals ; objectives; scope of work;and 2) their roles and responsibilities, as set forth in the team building workshop. Monitor and confirm that the technical aspects of the projects being performed are in compliance with the City's expectations. Verify that information generated by the project is appropriately filed and maintained.

Conduct weekly project coordination meetings with key team members in concert with designated representatives of the City Management Team. Monitor the planned versus actual rate of expenditures for each task and take corrective actions as necessary. Monitor and report on a monthly basis percent complete per task, using the amount of work and budget that remains to be done as the primary measurements. Distribute monthly program status reports to all team members.

Communications. Conduct continual, proactive, responsive communications with the City Management Team. Meet weekly with the Wastewater Management Director. Meet monthly with all key team members. Coordinate and participate in technical reviews conducted by the City. Participate with the City project team in technical reviews conducted by Ecology. Focus on delivering itemized service products including: 1) monthly written progress reports discussing the work performed in the previous month and the work anticipated next month; 2) invoices; 3) budget and schedule projections; 4) sub-consultant status reports; 5) final designer and construction manager status reports; 6)and meeting minutes.

Schedule & Budget Administration. Monitor the master program schedule and budget and project-specific schedules and budgets on a monthly basis. Identify issues and deviations that could cause negative impacts. Review these schedules and budgets with the City Management Team and take corrective actions when needed in accordance with the Change Management Plan.

Quality Assurance & Quality Control. In cooperation with Dr. Larry Esvelt, the PMO will implement the processes and procedures described in the QA/QC Plan to ensure that the project will satisfy the objectives established as part of the Project Work Plan. Verify that QA/QC has been applied to each project phase and technical specialty. Confirm that specific project results are being monitored by each technical specialty and, if not, that potential solutions to eliminating unsatisfactory performance have been identified and implemented. Facilitate identification and assignment of appropriate senior reviewers for each specialty. Clearly indicate QA/QC activities in the project schedule.

Capital Improvement Program & Financing.

Prepare and submit to the Wastewater Management Director and the Capital Programs Manager annual updates to the Capital Improvement Program for the SAWTP. The initial CIP is presented in the Facilities Plan. After Phase 1 conceptual designs and additional studies have been performed, improvement needs and their respective costs will be updated and reflected in a revised CIP. Based on an updated schedule for implementation of the CIP, a revised cash flow projection will be developed. The PMO will work with the appropriate City team representative to review and update the financing plan annually.

Community Information.

An important goal of this program is to provide timely and accurate information to the public on a regular basis. This goal will be achieved as part of the overall City communications program. A web page will be developed in concert with the City Communications Office for inclusion on the City's web site. This page will be used as a tool for reporting program status information to the public at large. Semi-annually, a report will be prepared for distribution to neighbors adjacent to the plant. The second of these reports will be an annual summary report. The PMO will also prepare and present annual status updates to the City Council and Public Works Committee and attend other Council briefings as requested. Depending on the level of public interest expressed there may be a need for additional educational materials and public meetings.

Deliverable Production. All deliverables will be assembled, reproduced and distributed as part of the individual project section responsible for creation of the deliverable.

Managing Change

Identify, analyze and develop strategies. Implement the Change Management Plan by logging and tracking potential changes identified from any source; analyzing the change and its impacts; and developing a response strategy. Change Authorization. Communicate the suggested strategy to resolve the change and make appropriate revisions as necessary to gain endorsement for the change. Obtain written authorization for a contract change from the City Wastewater Management Director, the City Council, and the PMO Director, as representatives of the contract stakeholders.

Work plan Revisions. Prior to undertaking work as a result of an authorized change, revise the work plan to prevent misunderstandings, discontent and poor project performance. Monitor the implementation of the change using the standard project tools and techniques described in the preceding tasks.

Closeout

Task Closure. Using the work breakdown structure from the work plans, incrementally close individual work tasks as they are completed. Document and communicate task closures with City Management Team and PMO staff.

Demobilization. Perform timely demobilization of project staff and resources based on the Project Schedule of deliverables and milestone linkages.

Archiving. Collect project materials, files and records. Consolidate and sort them into an organized record. Box up the hard files, create a file inventory and send to the appropriate storage location. Make disc copies of electronic files, label and inventory, arid send to storage. Provide copies of appropriate documents and electronic files to the City and SAWTP staff.

D. Deliverables

The following general administration deliverables are currently identified:

- Team Agreement
- Master Work Plan
- Communication Plan
  - Web Page
  - Semi-annual Neighborhood Reports
- Change Management Plan
- Master Schedule
- Master Budget
- Quality Assurance & Quality Control Plan
- Weekly Meeting Minutes
- Monthly Meeting Minutes
- Monthly Status Reports
- Monthly Invoices
- Annual Report
- Annual Revised Capital Improvement Program

III. Program Engineering

A. Objectives

Program engineering encompasses all of the engineering tasks that are necessary to carry the improvements proposed in the City's 10 year SAWTP Capital Improvement Program as referenced in the Facility Plan's CIP to a level of definition that is adequate to permit preparation of final plans, specifications and cost estimates by others. Program engineering is divided into two stages: conceptual design and preliminary design. Conceptual Design is the process for evaluating process alternatives; selecting the preferred system; and establishing the locations, sizes, orientations and operating characteristics of the facilities to be designed. Conceptual Design will culminate in a written Engineering Report. Preliminary Design is the process that translates the Engineering Report recommendations into preliminary plans and specifications to an approximate 30 percent level of design completion.

B. Assumptions

- Conceptual and preliminary designs will be carried out for the treatment improvement packages outlined in the Facility Plan. The conceptual design process may result in recommendations for changes to the existing Capital Improvement Program (CIP). All of the proposed CIP facilities are to be constructed and fully operational by the end of the year 2006.
- The current aeration system replacement project will be completed by November of 1998 and no additional PMO work will be needed to bring the new system on line.
- The City is purchasing three (3) new belt filter presses for installation during the fall and winter of 1998/99. The PMO may perform conceptual, preliminary and final design and construction management services for this installation. Section VI. of this Scope of Services addresses those tasks.
- Detailed scopes, budgets and schedules for all Conceptual and Preliminary Designs will be prepared and presented to the City as written work plans. City approval of the work plans will be a prerequisite to commencing work.
- Engineering Reports, presenting the results of Conceptual Design, will be prepared in compliance with WAC 173-240. The level of effort to prepare and detail presented in the Engineering Reports will be comparable to the "Engineering Report for the Replacement of the Activated Sludge Aeration System," prepared by CH2M HILL in 1997.
- SEPA checklists will be included with all Engineering Reports, but further environmental impact analyses are not anticipated.
- Ecology will require review and approval authority of the Engineering Reports and SEPA checklists.
- Phase 1 Conceptual and Preliminary Design will be performed in 1998/99 for the Solids Process Rehabilitation projects generally identified in the City's 10 year Capital Improvement Program and referenced in the Facilities Plan as Package 2,

project nos. TP2a, TP2b, TP2c, TP2d and TP2e. Final design and construction of this package is to be performed by others during 1999.

Phase 1 Conceptual and Preliminary Design will be performed in 1998/99 for the Liquids Process projects generally identified in the City's 10 year Capital Improvement Program and referenced in the Facilities Plan as Packages 3 and 4, project nos. TP3, TP4a and TP4b. Final design of these liquid process packages will be performed by others in the year 2000. Phase 1 Conceptual design will be performed in 1998/99 for the Liquids Process projects generally identified in the City's 10 year Capital Improvements Program and referenced in the Facilities Plan as Package 11, project nos. TP11a and TP11b. Preliminary design of these projects will be performed in the next phase of the program expected to begin in the year 2000.

- Ecology will not require review and approval authority of preliminary plans and specifications.

C. Work Tasks

Conceptual Design. A standardized conceptual design process will be applied to both the solids and liquids projects. The solids and liquids projects are referenced separately here, because future detailed work plans will distinguish between the two categories of projects. In general the conceptual design process will include three steps: workshops, conceptual design, and engineering report.

- Workshops will be conducted to develop the design concepts. The PMO will:
  - gather background information,
  - analyze data, and
  - organize and conduct the workshops.
- Alternatives will be developed. This will entail:
  - Preparation of process calculations
  - Evaluation of process alternatives
  - Development of conceptual designs
  - Site visits
  - Economic evaluations including life cycle cost analyses
  - Meetings with City staff
- An Engineering Report, summarizing the conceptual design, will be prepared. This will entail:
  - Preparation of a draft engineering report
  - Preparation of a SEPA checklist
  - Inclusion of City-generated grant eligibility analysis
  - Response to City and Ecology review comments
  - Preparation and submittal of the final report

Preliminary Design. Design of the specific facilities, equipment and processes, recommended in the Engineering Report, will be conducted to an approximate 30% level of completion. This will involve preparation of 30% drawings and an outline of the specifications. The following drawings will typically be required:

- Process — 90% complete
- Civil — Approx. locations of all structures, roads, and existing facilities
- Structural — Major elements defined; major dimensions set; materials selected.
- Mechanical — Major equipment and pipelines shown; major equipment selected.
- Instrumentation/ Control — Process &Instrumentation Diagrams 75% complete. Control systems selected.
- Electrical — Distribution concept developed; One-line diagrams and Motor Control Centers (MCC's) shown.

The Draft Preliminary Design drawings and outline specifications will be submitted to the City for review and comment prior to completion for use in the selection of the final design firm(s). A preliminary construction cost estimate of the proposed improvements will also be prepared.

D. Deliverables

The following Program Engineering deliverables are currently identified:

Conceptual Design:

- Phase 1 Solids Conceptual Design Work Plan
- Phase 1 Solids Draft Engineering Report
- Phase 1 Solids SEPA Checklist
- Phase 1 Solids Final Engineering Report
- Phase 1 Liquids Conceptual Design Work Plan
- Phase 1 Liquids Draft Engineering Report
- Phase 1 Liquids SEPA Checklist
- Phase 1 Liquids Final Engineering Report

Preliminary Design:

- Phase 1 Solids Preliminary Design Work Plan
- Phase 1 Solids draft 30% complete drawings
- Phase 1 Solids final 30% complete drawings
- Phase 1 Solids specifications outline
- Phase 1 Solids preliminary construction cost estimate
- Phase 1 Liquids Preliminary Design Work Plan
- Phase 1 Liquids draft 30% complete drawings
- Phase 1 Liquids final 30% complete drawings
- Phase 1 Liquids specifications outline
- Phase 1 Liquids preliminary construction cost estimate

APPENDIX E

IV. Final Design & Construction Administration

A. Objectives

Final design and construction services are to be performed by a wide array of qualified engineering firms not employed by the PMO; yet the completed SAWTP improvements must accurately reflect the intent of the PMO conceptual designs and simultaneously meet the fiscal and operational expectations of the City. The PMO will help ensure that this objective is accomplished by administering all final design and construction management activities.

B. Assumptions

- Final design and construction services will be performed by firms independent of the PMO, except when specifically directed otherwise by the City.
- Final design and construction service consultants will contract directly with the City.
- The PMO will establish the qualification criteria and conduct the process for selecting engineering firms who will perform the final design and construction services.
- The firms who are selected for final design will be expected to also perform the construction services needed for their own respective design projects.
- Negotiation of the scope and compensation for final design and construction services will be led by the PMO.
- In general, final design services will be performed by others and will include, but not be limited to, preparation of final plans and specifications suitable for soliciting construction bid proposals.
- The PMO will be responsible for printing and binding final plans and specifications into completed bid documents.
- The PMO is the approval authority for all final SAWTP plans and specifications on behalf of the City.
- Ecology will not require review and approval authority of final plans and specifications.
- The PMO will conduct and coordinate the construction bidding process with the City including advertisement for bids, distribution of bidding documents, response to bidders' questions, preparation of addenda, attendance at the bid opening, review of bids, preparation of bid summary, and recommendation to the City regarding award.
- In general, construction services will be performed by others and will include but not be limited to periodic site visits by the designer, review of shop drawings and submittals, resident construction observation, supervision of resident observers, approval of monthly pay requests, and participation in resolution of construction claims and design change orders.

C. Work Tasks

Design Administration

General. The PMO will perform certain activities that are independent of specific design projects. Among these activities are:

- Apply City of Spokane design "special provisions" where applicable, unless otherwise directed by the City.
- Development of standard design contract terms and conditions.
- Development of standard design performance requirements.
- Development of standard specifications and special provisions.
- Development of CAD drawing format and standards consistent with applicable City standards where appropriate.

Final Design Administration. The PMO will administer all of the final design process performed by other independent consulting engineering firms. The primary administrative activities that will be applied to both Solids and Liquids Facility designs include:

- Selection of the final design firms. This process will entail a number of distinct tasks:
  - Establishment of selection criteria and scoring system
  - Establishment of selection committee
  - Preparation of RFPs/scopes of work
  - Proposal advertisements
  - Distribution of background materials to interested applicants
  - Response to applicant questions (including addenda as necessary)
  - Conduct of pre-proposal meetings
  - Receipt and review of proposals
  - Development of short list
  - Conduct of interviews (when deemed necessary)
  - Ranking and final selection recommendation to the City
- Final design firm contract negotiations. The PMO will lead the contract negotiations with the selected final design firms. With each design firm this process will consist of a number of activities:
  - Review with the selected firm all project background materials for clarity and intention.
  - Establishment of project specific design criteria.
  - Establishment of project specific design standards.
  - Negotiation of the final design scope, tasks, resource allocations, levels of effort, performance schedule, milestones and compensation.
  - Preparation of draft final design agreement in conformance with Ecology's requirements for City review and approval.
  - Completion of final design agreement for submittal to City Council.

- Final design management. The PMO will manage the selected final design firms as they carry out their respective design activities. Management will focus in several areas:

  - Communications. The PMO will conduct an initial design kick-off meeting with key staff of the design firm. Biweekly progress meetings will be conducted with the design project manager. A routine process for handling questions and answers will be established. A status assessment of final design will be included in each monthly PMO status report.
  - Quality Assurance/Quality Control. The PMO will review the established design standards with the final design firm. Appropriate intermediate submittals will be identified for informal reviews. Formal design and constructibility reviews will be performed by PMO staff in coordination with SAWTP operational staff at the 70% and 95% levels of design completion.
  - Schedule and Budget Management. The design firm will be required to prepare and submit a bi-weekly report to the PMO summarizing percent spent versus percent complete. The PMO will monitor the status of intermediate submittals as a means of assessing design progress.
  - Change Management. A process will be established with the design firm to identify and evaluate potential scope changes before they translate into cost or schedule exceptions. The process will be similar to the change management process established for the PMO.
  - Invoicing. A standard design services invoice format will be established that corresponds to design performance. Design services payment will depend on percent complete. Each month, design firm invoices will be received and reviewed by the PMO and recommendations regarding payment will be submitted to the City for processing.

Construction Administration

Program-wide. The PMO will administer all construction bid packages including constructibility reviews, submittal of construction contracts to the City for approval, overall program construction schedule and budget tracking, coordination and control of the SAWTP site with respect to multiple simultaneous construction contracts, and coordination and scheduling of treatment process interruptions with the SAWTP superintendent to maintain discharge quality. Some specific activities that will be carried out include:

- Secure & monitor monthly status updates from all consultants and general contractors on the site
- Merging of all schedule updates into a detailed master schedule
- Maintenance of a monthly master program schedule
- Consolidation of all progress payment each month
- Preparation of monthly comparison of actual program expenditures to budgeted cash flow
- Preparation of a composite monthly cost-to-complete analysis for the program

Project Specific. For each construction project the PMO will establish the construction management work scope with the selected CM firm and administer the services provided by the CM firm. Project specific construction administration activities that the PMO will perform include:

- Establish a CM Supplemental Agreement with the Final Design firm. The CM scope, level of effort, schedule, staffing, and compensation will be negotiated and defined in a draft supplement to the final design agreement. Following City review, the agreement will be finalized for submittal to the City Council.
- Administer Construction Bid Process. The PMO will assist the City in advertising for bids, distribute bid packages, maintain bidders' list, conduct a pre-bid conference, review pre-bid submittals, respond to bidder's questions, prepare and issue addenda, attend the bid opening, evaluate bids received and make a recommendation to award the construction contract.
- Administer all CM Services. Following award of the construction contract, the PMO will perform an array of specific activities:

  Conduct a partnering workshop with the selected contractor, the CM engineering firm and the City.

  Attend a pre-construction conference

  Coordinate an acceptable construction/plant operations schedule

  Attend weekly construction progress meetings

  Collect and catalog construction photos

  Manage all construction documentation and maintain construction files

  Coordinate, log and maintain all official Requests For Information's

  Participate, review, and approve all change orders prior to submittal to the City

  Supervise submittal review process and maintain submittal log

  Review and approve progress pay requests prior to submittal to the City

  Participate in final inspection

  Coordinate facilities start-up

  Coordinate operator training

  Monitor preparation of record drawings by Contractor

  Receive and compile O&M documentation

  Conduct and document spare parts transfers

APPENDIX E

D. Deliverables

The following design and construction administration deliverables are currently identified:

Design Administration

- Design Administration work plan
- Standard design contract terms and conditions
- Standard design performance requirements
- Standard specifications and special provisions
- CAD drawing format and standards
- Design RFP's
- Design firm recommendations
- Draft and final design firm agreement
- Bi-weekly design meeting minutes
- Monthly design status assessment
- Design firm change orders
- Design firm invoices with payment recommendations
- Monthly summary of program expenditures versus budgeted cash flow
- Monthly summary of program costs-to-complete analysis

Construction Administration

- Construction Administration work plan
- Draft and final CM supplemental agreements
- Bidder addenda
- Recommendations to award construction contracts
- Construction/plant operations schedules
- PMO recommendation on final construction change orders
- PMO review and approval of construction progress pay requests and recommendations
- Compilation of final inspection reports
- Compilation of record drawings
- O&M documentation

V. Additional Services

A. Objectives

The following activities represent work that is optional to this contract. For the City to exercise any or all of these services require the approval of the Director of Wastewater Management. The scope for Phase 1 -Additional Services are as described below. The total budget for this Phase 1 work is included under exhibit D-1. Specific work scope and budget for each individual Phase 1 Additional Services will be prepared by the PMO for review and approval by the Director of Wastewater Management . The intent is that PMO costs do not exceed the total budget in exhibit D-1.

B. Assumptions

The City will require additional work and special studies: to address the impending NPDES permit issued by Ecology which may include ammonia limits, metals limits, phosphorus limits, water quality based effluent limits, and other related issues.

- The City will need to update the Wastewater Facilities Plan during the life of the PMO contract.
- The complexities of some of the proposed improvements may justify execution of formal Value Engineering (VE) evaluations following completion of Preliminary Designs.
- There is a need for a collaborative process to develop a comprehensive, integrated water resource vision for the Spokane area.

C. Work Tasks

Special Studies - Phase 1

The additional work and special studies to be conducted in Phase 1 (1998/99) will consist of the following tasks:

- Assist the City in providing support documentation for consideration by Ecology in development of NPDES permit. Review the draft NPDES permit and provide comments for submittal to Ecology. Support documentation would include work by the PMO as it applies to effluent limits of ammonia, metals, phosphorus, and the establishment of a database comprised of recent and new Spokane River quality data.
- Assist the City in the review of Ecology's Spokane River Dissolved Oxygen modeling effort.
- Using currently available data, review water quality impacts of the secondary bypass 005B at the SAWTP and determine what effect secondary bypass 005B should have on the capacity of the SAWTP. Conclusions and recommendations will be presented in a summary report.

Special Studies - Future Phases

The following are additional work and special studies which may be performed by the PMO and authorized by the City in future contract Phases.

Addendum's to Water-Quality-Based Effluent Limits for SAWTP Effluent Ammonia Toxicity Studies Upstream Spokane River data will be gathered, and a Monte Carlo analysis will be performed to assist in the establishment of water-quality-based ammonia limits for the SAWTP. An analysis of ammonia concentrations will be performed to confirm that ammonia is not present in toxic concentrations in the Spokane River downstream of the SAWTP. The final conclusions will be presented in a summary report.

- Metals Toxicity Studies
  - Additional metals data will be gathered if required by Ecology. Additional metals analysis may be unnecessary depending on the outcome of discussions of metals limits with Ecology. Existing dilution evaluation studies will be reviewed to confirm minimum assumed dilution is occurring. A new dilution study will be performed if the current study is not sufficient. Final results will be described in a summary report.

- Effluent Filtration Study
  - Review the Ecology water quality model of the Spokane River and develop input assumptions for the SAWTP effluent. Evaluate the relationship between effluent phosphorous and river dissolved oxygen to establish the need and timing for effluent filtration or other treatment alternatives. Results of the evaluation, along with conclusions and recommendations, will be presented in a summary report.

- Value Engineering
  - Upon completion of each Preliminary Design, an independent Value Engineering study may be performed, if requested by the City. The purpose of the VE study will be to evaluate the preliminary design and recommend changes, consistent with the program's objectives, which will improve the performance of the constructed facility and/or reduce the cost of its construction. Each VE study will be led by a certified Value Engineer and staffed by specialists from each of the appropriate technical disciplines. None of the members of the VE Teams will have participated in the conceptual and pre-design efforts.

  - The PMO's role would be limited to organization of the VE team, explanation of the preliminary design facilities and the base design criteria. Specifically, the PMO will select the VE team members; establish acceptable work scopes, budgets, and contracts with the VE team members; organize, schedule and facilitate the study; review the VE recommendations; prepare a response technical memorandum; and incorporate agreed upon changes into the preliminary design.

Potential Future Studies (not included in the overall budget)

- Facilities Plan Update
  - At some point in the future after the current Facilities Plan has been approved by Ecology, the plan will need to be updated Formal incorporation of the special studies listed above may be required. The 1994 CSO Plan recommendations as well as the findings of the Storm Water Management Plan may be incorporated as well.
- Resource Visioning
  - If requested by the City, the PMO will organize and facilitate a collaborative process to develop a comprehensive, integrated water resource vision for the Spokane area.
- Pilot Land Treatment System
  - If requested by the City, the PMO will assist the implementation of a pilot treatment facility. This activity may consist of identifying an acceptable location for the facility; preparing an engineering report that defines the conceptual design of the facility; completing a SEPA checklist for the conceptual design; preparing the preliminary design drawings, specifications and cost estimate; selecting a final design engineering/CM firm; administering the final design and construction services; and conducting plant start-up and commissioning.

D. Deliverables

The following Additional Services' deliverables are currently identified:

Special Studies - Phase 1

- Special Studies Phase 1 Work Plan
- Spokane River database
- Secondary Bypass 005B Summary Report (draft & final)

Special Studies - Future Phases

- Effluent Ammonia Toxicity Summary Report (draft & final)
- Metals Toxicity Summary Report (draft & final)
- Effluent Filtration Study (draft & final)
- Value Engineering Study Work Plan for each selected preliminary design
- VE Response Technical Memoranda

Potential Future Studies - to be determined

APPENDIX E

VI. Belt Filter Press Design and Construction Management

A. Objectives

The City is in the process of purchasing new Belt Filter Presses (BFP) for the SAWTP. There is a need for immediate services to:

- define how the equipment is to be installed,
- determine what other equipment and control revisions will be necessary to accommodate the resulting increased flows,
- provide plans and specifications to secure bids from qualified contractors to furnish and install additional required equipment and install the owner-furnished BFPs,
- manage the construction activities of the selected contractor.

B. Assumptions

- The belt filter presses are to be installed during the winter and spring of 1998-99.
- Existing solids handling equipment must continue to operate satisfactorily during installation of the new BFP's and ancillary facilities.
- The project is being carried out to replace existing, deteriorating equipment and improve plant operations and maintenance. Therefore an Ecology-approved engineering report will not be required.
- A SEPA checklist, but not an EIS, will be needed.
- Other permits may be required and will be identified during preparation of the SEPA checklist.
- Complete plans & specifications will be prepared to thoroughly describe the installation requirements.
- No approval of the plans and specifications will be required by Ecology.
- Complete construction management services including part time inspection will be provided.
- CAD standards will be the same as used for the current aeration system modifications design.
- A detailed work plan, addressing tasks, resource allocations, levels of effort, budget and schedule will be prepared for City review and approval prior to proceeding with work.

C. Work Tasks

Design

The Belt Filter Press design will include a number of tasks:

- Inventory of existing equipment, space, controls and access

- Process calculations to establish design flow parameters
- Identification of necessary equipment and control modifications
- Preparation of draft and final SEPA checklists.
- Assembly of standard specifications
- Preparation of Preliminary Design drawings addressing process, structural, mechanical, I&C and electrical features of the proposed installation.
- Preparation of special provisions
- Preparation of Final Design drawings.
- Assembly of final bidding documents
- Preparation of engineer's cost estimate for construction

Construction Management

Management of the installation of the Belt Filter Presses and ancillary equipment will include several activities:

- Bidding.
  - Prepare the bid advertisement for City publication.
  - Distribute bid documents
  - Maintain bidders' list
  - Respond to bidders' questions
  - Prepare and issue Addenda
  - Attend the bid opening
  - Review the bids and make a recommendation regarding contract award.
- Pre-construction.
  - Organize and facilitate partnering session with successful bidder and major sub contractors
- Administration.
  - Maintain project files and turn over to the city upon completion of work.
  - Prepare and distribute monthly status reports on progress of construction and costs incurred to date.
  - Coordinate pre-purchased equipment with the Contractor performing the installation.
- Inspection.
  - Conduct daily inspection of the construction to insure conformance with the contract documents.
  - Maintain daily inspection diaries.
- Scheduling.
  - Review and make recommendations on Contractor's schedule prior to acceptance by the City.

- Review monthly updates of Contractor's schedule to insure orderly progression of the work.

- Requests for Information (RFI).
  - Receive and respond to RFI's submitted by the Contractor.
  - Maintain RFI log showing dates and disposition of each RFI.
- Change Orders.
  - Prepare change orders as necessary for changed conditions to the work.
  - Prepare independent cost estimates of the work revisions and negotiate cost and/or time impacts with the Contractor.
- Submittals.
  - Receive, distribute and review submittals from the Contractor.
  - Transfer reviewer comments to all copies of the submittal and submit the comments to the Contractor.
  - Maintain a submittal log showing dates and disposition of each submittal.
- Progress Payments.
  - Review progress pay requests submitted by the Contractor.
  - Prepare monthly progress pay recommendations for City review and approval.
- Contractor Meetings.
  - Conduct weekly meetings with the Contractor to review the work and plan future work activities.
  - Maintain minutes of all meetings and distribute copies to all attendees.
- Spare Parts.
  - Catalog and prepare transfer forms for all spare parts required by the contract documents.
- Start-up Commissioning.
  - Coordinate start-up and commissioning activities with City operators, contractor, equipment vendors and specialty inspectors.
  - Verify acceptance testing as required by the contract documents.
- Record Drawings.
  - Maintain record drawings showing actual installation of the work.
  - Revise electronic plans, showing as-built conditions upon completion of the construction.

D. Deliverables

Design

- Preliminary Design work plan
- Draft and final SEPA checklist
- 30% Design Drawings
- Final Design work plan
- Final Design drawings
- Bidding documents
- Construction Cost Estimate

Construction Management

- Construction Management work plan
- Bid advertisement
- Addenda
- Recommendation regarding contract award
- Monthly status reports
- Change orders
- Progress pay request recommendations
- Certification of substantial completion
- Final inspection report
- Record drawings

APPENDIX E

EXHIBIT I
ADDITIONAL TERMS AND CONDITIONS

A. STANDARD OF CARE. The standard of care applicable to Consultant's services will be the degree of skill and diligence normally employed by professional engineers or consultants performing the same or similar services at the time said services are performed. Consultant will re-perform any services not meeting this standard without additional compensation.

B. CONSULTANT'S PERSONNEL AT CONSTRUCTION SITE.

1. The presence or duties of Consultant's personnel at a construction site, whether as on site representatives or otherwise, do not make Consultant or Consultant's personnel in any way responsible for those duties that belong to the Agency and/or the construction contractors or other entities, and do not relieve the construction contractors or any other entity of their obligations, duties, and responsibilities, including, but not limited to, all construction methods, means, techniques, sequences, and procedures necessary for coordinating and completing all portions of the construction contract Documents and any health or safety precautions required by such construction work.

2. Consultant and Consultant's personnel have no authority to exercise any control over any construction contractor or other entity or their employees in connection with their work or nay health or safety precautions and have no duty for inspecting, noting, observing, correcting, or reporting on health or safety deficiencies of the construction contractor(s) or entity or any other persons at the site except Consultant's own personnel.

3. The presence of the Consultant's personnel at a construction site is for the purpose of providing to the Agency a greater degree of confidence that the completed construction work will conform generally to the construction documents and that the integrity of the design concept as reflected in the construction documents has been implemented and preserved by the construction contractor(s). Consultant neither guarantees the performance of the construction contractor(s) nor assumes responsibility for construction contractor's failure to perform work in accordance with the construction documents.

C. RECORD DRAWINGS. Record drawings will be prepared, in part, on the basis of the information compiled and furnished by others, and may not always represent the exact location, type of various components, or exact manner in which the Project was finally constructed. Consultant is not responsible for any errors or omissions in the information from others that is incorporated into the record drawings.

D. CONTRACTOR INDEMNIFICATION AND CLAIMS.

1. Agency agrees to include in all construction contracts the provisions of the above article "Consultant's personnel at Construction Site", and provisions providing contractor indemnification of Agency and Consultant for contractor's negligence.

2. Agency shall require construction contractor(s) to name Agency and Consultant as additional insured on the contractor's general liability insurance policy.

E. LITIGATION ASSISTANCE. The Scope of Services does not include costs of the Consultant for required or requested assistance to support, prepare, document, bring, defend, or assist in litigation undertaken or defended by the Agency. All such services required or requested of the Consultant by the Agency, except for suits or claims between the parties to this agreement, will be reimbursed as Extra Work.

5. **Gravity Belt Thickeners—(149204.P1.GC.CM):** This construction project is complete, however, additional effort for construction management services was required because of extensive positive and negative change orders. The budget needs to increase.

6. **Additional Services—(149204.P1.AS):** The Additional Services category was included in the original contract and in the subsequent contract amendments. It provides for miscellaneous services that are not specifically addressed in the design and construction management work categories. Some of the items in this category were for plant operational assistance, for example, with the biofilter system. Additional services currently include: ongoing assistance with the dissolved oxygen TMDL-setting process of Ecology; ongoing "on-call" plant electrical consultation, ongoing assistance with development of operating guidelines for DO control in the ABs; and, ongoing clarifier structural inspections.

   At this time new tasks have been identified for inclusion under additional services. These tasks are as follows:

- **"On call" assistance with plant operations:** From time to time the plant staff have miscellaneous plant operations problems arise that may require or may benefit from consulting assistance and services will be provided as requested from 2003 through 2006.

- **"On call" assistance with plant instrumentation and control:** From time to time the plant staff have miscellaneous plant instrumentation and control problems arise that may require or may benefit from consulting assistance and services will be provided as requested from 2003 through 2006.

- **River Flow Analysis:** After several CSO structures were modified to reduce inflow from the Spokane River, the city wanted to see how these improvements affected the SAWTP. An analysis of the river flow in relation to the plant flow for April and May 2002 was compared to the same analysis shown in the Conceptual Design Report for the Phase I Liquids Improvements, July 2001.

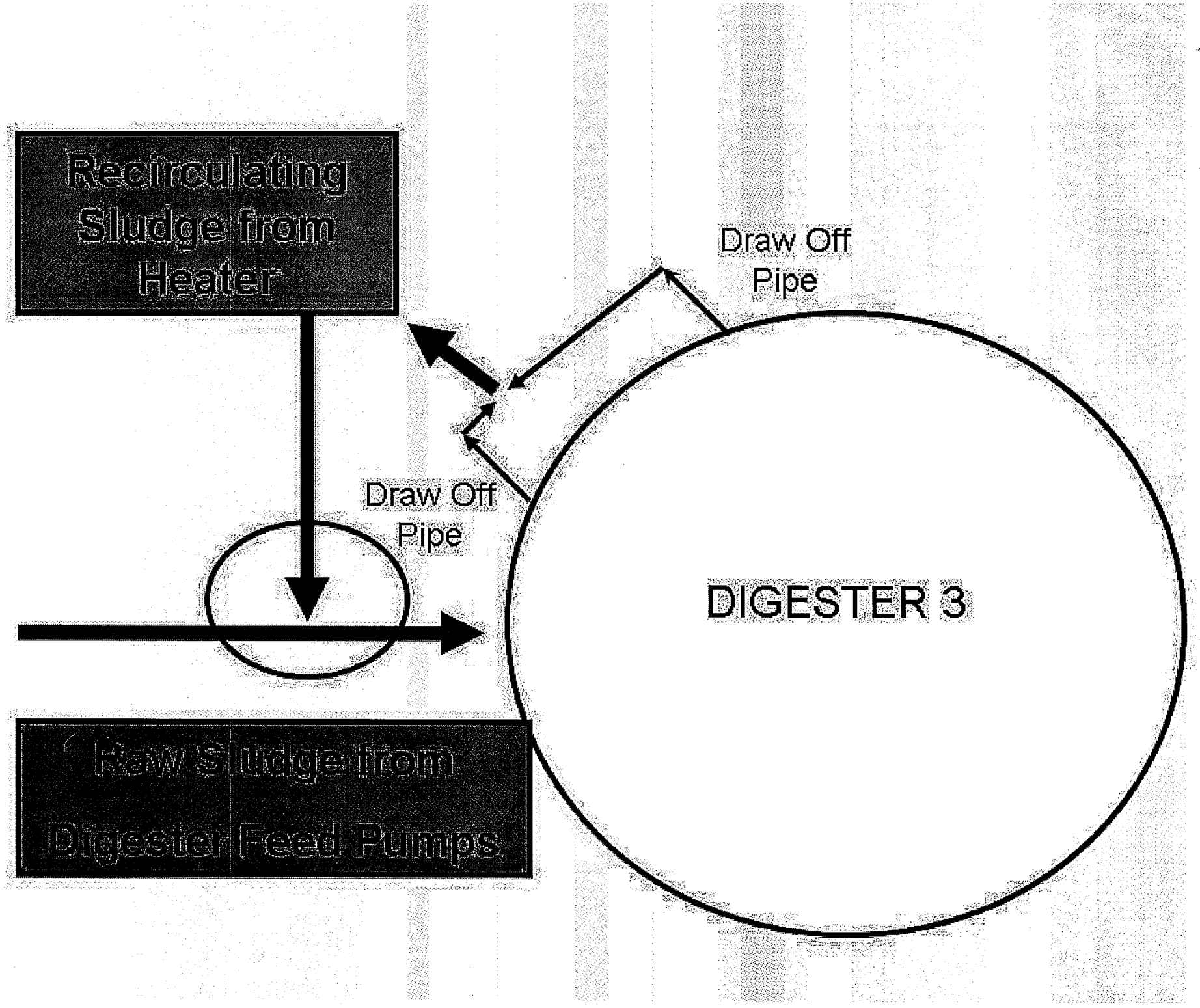
- **Life Cycle Costs for Headworks vs digester:** There has been some discussion regarding the order of constructing headworks improvements with finer screens versus a new digester. The city desired a life cycle cost comparison between the two projects as background information to continue these discussions.

- **Boiler Piping Changes:** The design bid documents were prepared based on design criteria assumptions for the pre-purchased boiler. These assumptions were not verified by the boiler manufacturer until the boiler was placed in service. The manufacturer said that the assumptions needed to be modified slightly to provide more gas supply pressure to the new boiler. The supply piping design was modified to account for this change from the manufacturer.

- **Legal Description for Property Transfer:** To finalize the property transfer activity underway between the city and the state, a legal description of the SAWTP property parcels had to be completed.

7. **AG3 Pump Station Conversion—(149204.C1.CP)**

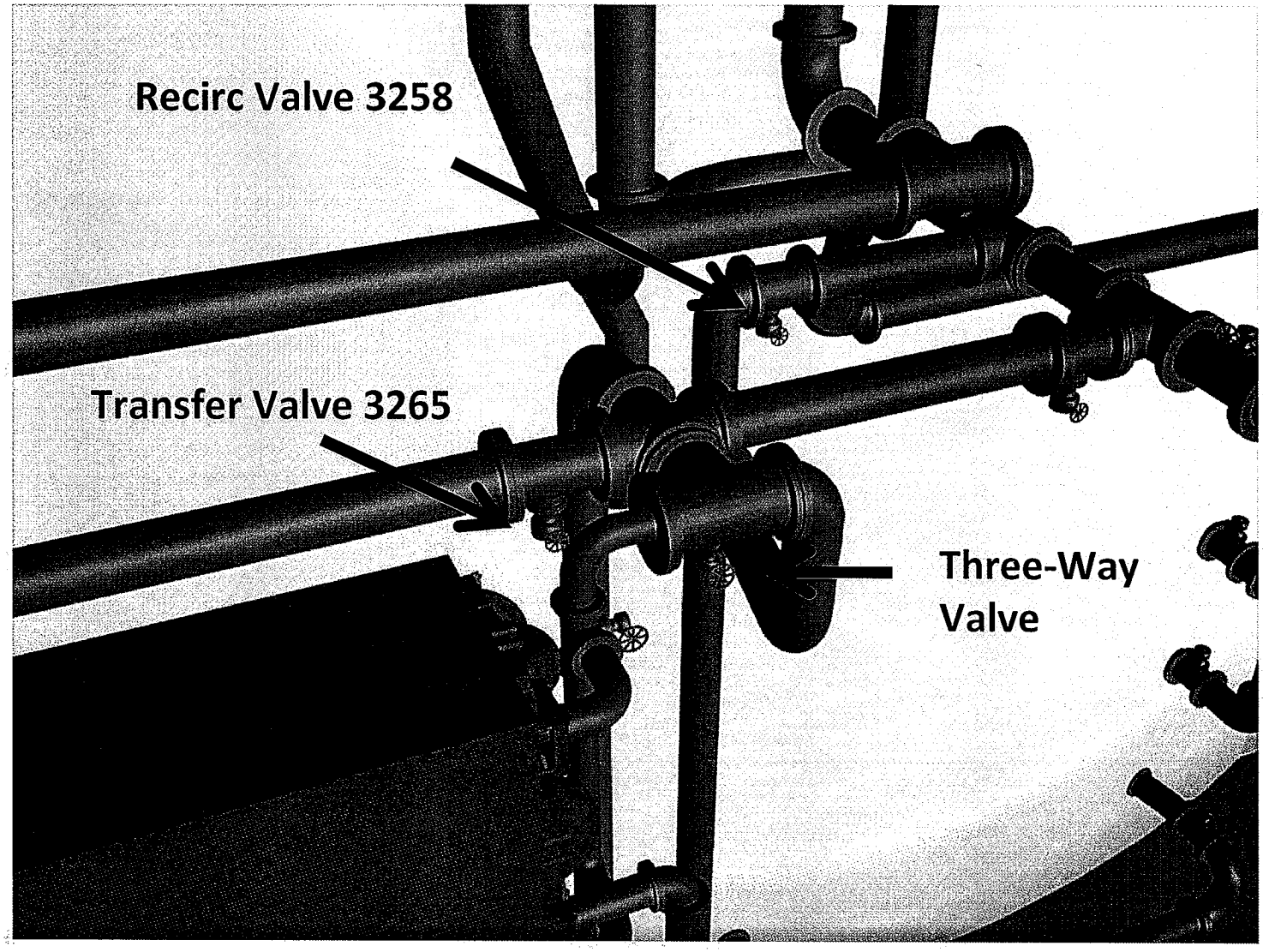
- **Design—(.FD):** Additional design services include adding predesign of the entire AG3 pump station, another WAS pump and clarifier scum skimmings pump, multiple construction schedules and combining this project with the Aeration Basin No. 6 bid package, a chlorine contact basin scum skimmer system and specialized electrical design for timer controls, tunnel piping work, liquid level monitoring for CSO clarifiers, devicenet modules for fans, clarifier scum skimming wet well level monitoring for all AG pump stations, a chlorine injection system for RAS in AG3 pump station, and design analysis and details for replacing the existing chlorine injection system RAS in AG1 and AG2 pump stations. Furthermore, once preliminary design was complete, it became obvious that conventional construction sequencing was insufficient to maintain plant operations and the effort to develop construction sequencing had to be increased and specially incorporated into the contract documents. The budget needs to increase for these additional services.


Recirculating Sludge from Heater
Draw Off Pipe
Draw Off Pipe
DIGESTER 3
Raw Sludge from Digester Feed Pumps

Appendix H

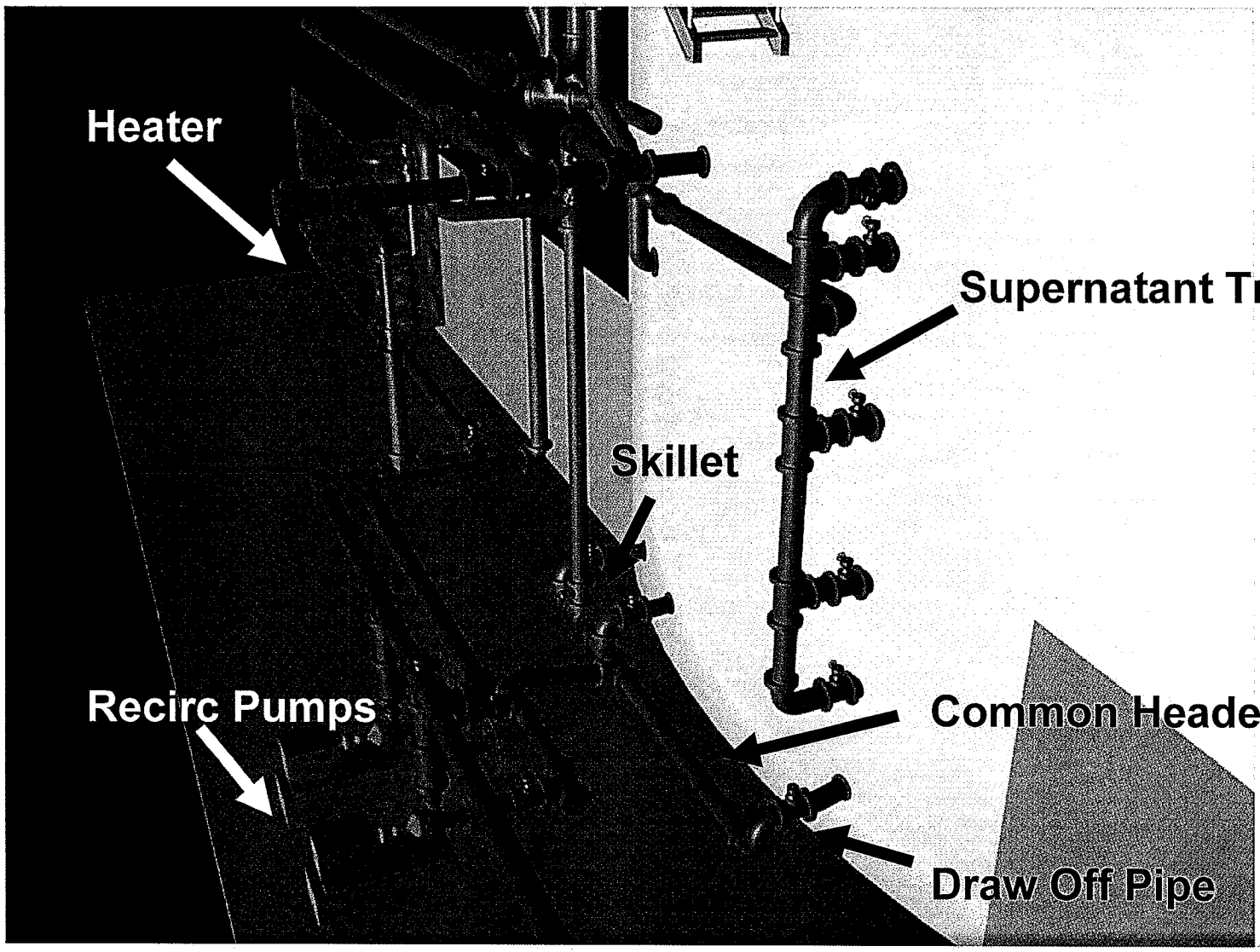
DIGESTER 3
Recirculating
sludge from
Heater
Raw sludge from
Digester Feed
Pumps

Recirculation With Skillet



CH2MHILL

Recirculation With Skillet



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Appendix I

No Skillet

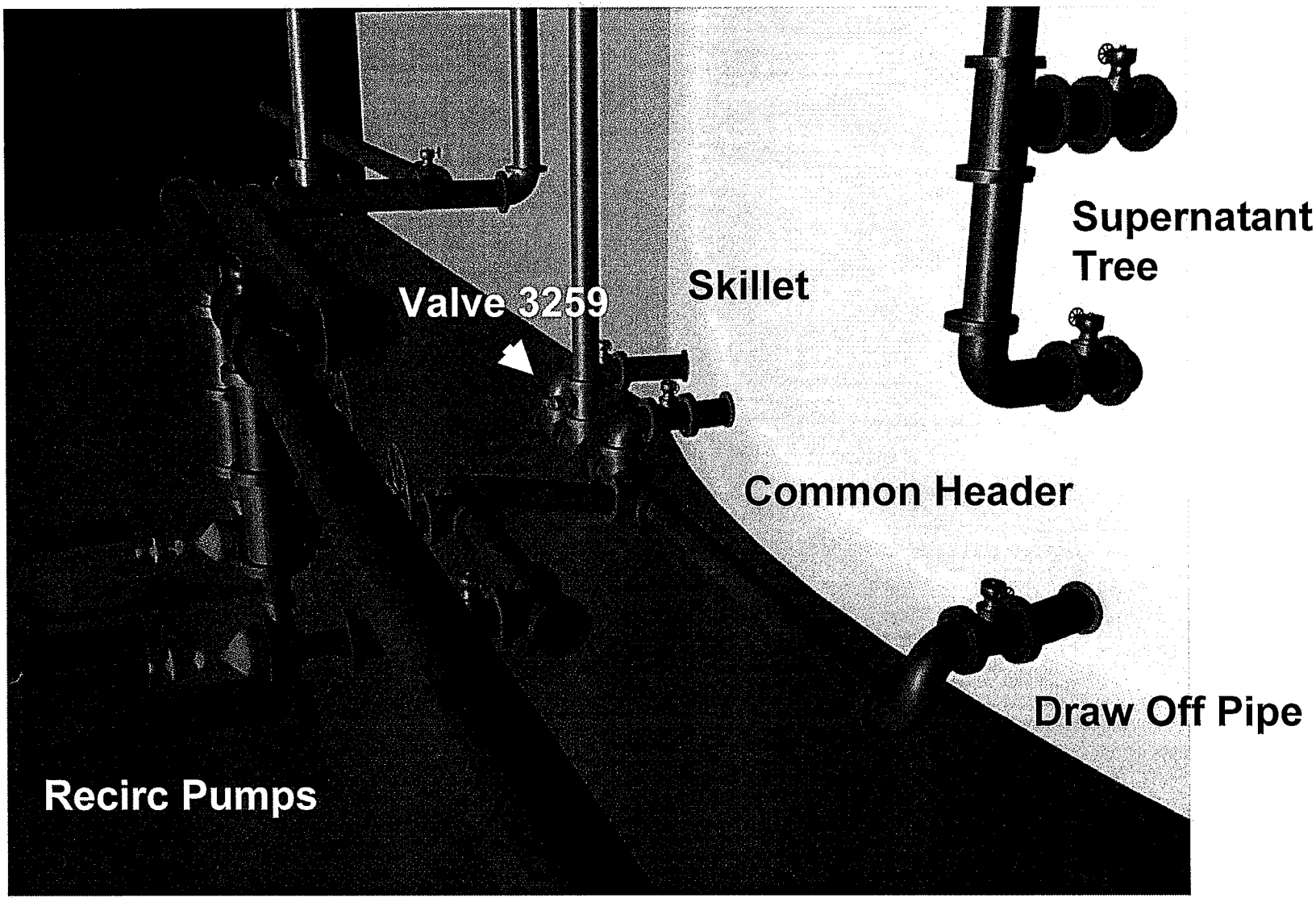
Side By Side

With Skillet

play

Side By Side

Recirculation With Skillet



Appendix I