

## B.C.'s First Female Level IV Operator



**S**andra MacKenzie started her career in wastewater treatment in Nanaimo, B.C., graduating from the Water & Wastewater Treatment Operator Program at Malaspina College in 1985.

She was employed by the Engineering Department of the City of

Calgary from 1985 to 1987, working as a plant operator I at the Fish Creek Sewage Treatment Plant. She was certified as a Level I WWT Operator in Edmonton, Alberta in 1986.

Sandra moved to Vancouver Island and worked as a Wastewater/Waterworks Operator I from 1988 to 1990 for the Capital Regional District in Victoria. She passed her WWT Level II exam in 1988 and her WD Level I exam in 1990.

From 1990 to 1993, Sandra worked as a WWT Level II operator at Annacis Island WWT Plant. In 1995 she moved to Kelowna and worked at the Kelowna Pollution Control Centre as a WWT Level II Operator. In 1997, Sandra and her family moved to the Town of Leamington, Ontario where Sandra was employed as a Level III WWT operator.



Sandra obtained her Level III WWT certification in February 1998 and returned to B.C. to take a job at the GVRD Lulu Island WWT Plant.

Sandra passed her WWT-IV exam in June, 1999. She is one of thirty active female certified operators in B.C. We all congratulate Sandra on becoming the first female operator in B.C. to obtain Level IV certification!

Sandra has one daughter, Caitlyn - aged 7.

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## Environmental Operators Certification Program

The B.C. Operators Digest is the official newsletter of the Program. Submissions for publication in the Digest are welcome and may be sent to the Editor:

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Business card sized advertisement space is available at \$50.00 per issue or \$175.00 for four issues. GST and PST included. For other sized advertisements, please contact the Editor.

The Environmental Operators Certification Program is a charter member of the Association of Boards of Certification, and is a Registered Society with over 1,300 active members.



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## Editor's Notes

This issue of the Digest includes a plant profile on the Salmon Arm Water Pollution Control Centre, a very interesting plant. There are profiles on the 1999 Operator of the Year Award winner, David Sivyler; and Board Director Bernie Taekema. We are always looking for plant profiles and operator profiles to publish in the newsletter. If you would like to submit any information please call the Editor or Board Office.

The Board will soon be able to offer exams for industrial wastewater treatment, small water systems and small wastewater systems for operators. The industrial exams will be specific to wastewater treatment plants such as those found in pulp mills. The small systems exams will benefit operators of those small systems who would otherwise take years to accumulate the necessary experience to qualify for certification. Having small water systems exams will assist the Board with the long term goal of mandatory classification and certification for water systems.

The Certification Program continues to grow as more and more water system operators become certified, in part due to anticipation of mandatory water certification. The Program remains in good financial health, with no change in membership dues once again.

A reminder now that summer is over, the Board has Program jackets for operators to order by calling the Board Office. Also the Board will be mailing out "Certified Operator" hardhat stickers to all operators in the near future.

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### 1998/1999 BOARD OF DIRECTORS

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Joe McGowan - Chairman  
Bill Hyslop - Industrial Waste  
Bernie Taekema - Facilities Classification  
Kevin Ramsay - BCWWA Liaison  
Leo Albrecht - CEU Assessment/Exam Coordinator  
Don Gare - Digest Editor  
Eric Jackson - Treasurer  
Al Lane - Secretary  
Dave McLean - Education Liaison

# BOARD BUSINESS BRIEFS

FROM THE ANNUAL GENERAL MEETING  
HELD MAY 17, 1999 AT U.B.C.

- The Treasurer submitted his report, with the following for the 1998 calendar year:

Revenue:	\$146,363.86
Expenses:	\$144,108.57
Bank Balance:	\$15,043.81
GIC's:	\$49,718.66
Mutual Funds:	\$15,000.01
Total Assets:	\$79,762.48

Election Results: 1999/2000 Board of Directors  
There were no nominations. The following Directors will continue in their respective positions by acclamation.

Joe McGowan - Employer Representative  
Bill Hyslop - Industry Consultant  
Don Gare - Operator  
Dave McLean - Operator

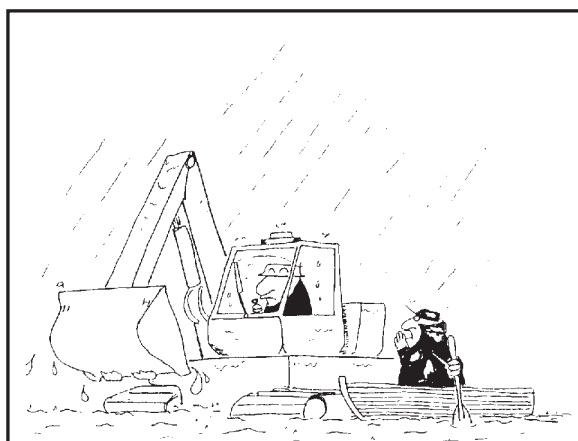
- A motion was passed that the EOCP Constitution be amended to reflect that the position of Secretary-Treasurer be two separate positions on the Board - Secretary and Treasurer.

FROM THE BOARD OF DIRECTORS MEETING  
HELD MAY 17, 1999 AT U.B.C.

- The two EOCP bursaries for \$500 each were presented at Okanagan University College in February 1999.
- Director Kevin Ramsay was appointed to act as the BCWWA liaison to the EOCP, and Director Dave McLean was appointed to represent the EOCP on the BCWWA Education Committee.
- The development of Industrial Wastewater Treatment Exams, Levels I to IV are underway. Once the exams have been completed, the EOCP will make presentations to industrial facilities.

Also the Board is developing two separate exams for Small Wastewater Systems (lagoon systems and mechanical systems); as well as an exam for Small Water Systems.

- In an update on mandatory Water Distribution application to the Ministry of Health; the BCWWA and the EOCP have formed a partnership with the Ministries of Environment, Health, and Municipal Affairs to promote training and certification of operators in water systems. One possibility is that the Regional Health Officers in the province may want to make mandatory water classification and certification a condition of permits in each region. The BCWWA/EOCP committee is working with the Ministry of Health towards this end.
- The Operator Certification Program Guide will be revised by the Fall.
- Once the Industrial Wastewater Treatment exams are completed, the addition of an Industrial Director to the Board will be addressed.
- The Board agreed that the operators' request for "Certified Operator" hardhat stickers was a good idea, so stickers will be designed and ordered for distribution to operators.
- The Board is to research changing of the program certificates to read Certification of Qualification instead of the present Certificate of Competency.



Try and keep the material dry.

# NEW MEMBERS AND UPGRADES

October 27, 1998 - May 31, 1999

CERT. NO.	NAME		CITY	CERT. NO.	NAME		CITY
3011	Alfred, Cecil	WD, I	Moricetown, B.C.	1911	Cobb, John	WWC, II	Maple Ridge, B.C.
3096	Allin, Douglas	WD, I	Squamish, B.C.	1585	Conrad, Kevin	WWT, I	Clinton, B.C.
729	Anderson, Ken	WD, I	Salmo, B.C.	1835	Craig, Campbell	WD, II	Oyama, B.C.
3064	Badine, Dale	WWC, I	Fort Nelson, B.C.	3104	Crandell, Ronald	WWC, I	Rossland, B.C.
3094	Bailey, Howard	OIT, WD	Prince Rupert, B.C.	2070	Crookes, Andrew	CH	Tumbler Ridge, B.C.
3069	Bains, Paul	WWC, I	Victoria, B.C.	2070	Crookes, Andrew	WWT, I	Tumbler Ridge, B.C.
3128	Ball, Laurence	WWC, I	Langley, B.C.	1503	Daoust, Tresa	WWT, III	Duncan, B.C.
3057	Baratta, Paul	WD, I	Burnaby, B.C.	2048	Davidson, Peter	WWC, I	Whistler, B.C.
3111	Barrett, Patrick	OIT, WWC	Nanaimo, B.C.	1952	De Jong, Harold	WWT, I	Fort Nelson, B.C.
3070	Bedwell, Colin	WWC, I	Victoria, B.C.	1529	DeJong, Eric	WWT, I	Prince Rupert, B.C.
3058	Bell, George	WD, I	Coquitlam, B.C.	3065	DeLeeuw, Brent	WD, II	Penticton, B.C.
1868	Bennewith, Brian	WD, II	Ashcroft, B.C.	3065	DeLeeuw, Brent	WD, I	Penticton, B.C.
3067	Bertrand, Thomas	OIT, WWT	Pitt Meadows, B.C.	1092	Denton, George	CH	Nanaimo, B.C.
1006	Betts, Todd	WD, II	New Westminster, B.C.	3117	Deschamps, Eugene	WWT, I	Keremeos, B.C.
1228	Bewley, Graham	WD, I	Victoria, B.C.	3127	Di Stasio, Tony	WWC, I	Coquitlam, B.C.
3023	Bitcon, Stanley	WWC, I	Maple Ridge, B.C.	1805	Digou, Raymond	WWT, II	Vernon, B.C.
792	Bjorgaard, Darryl	WWT, I	Thornhill, B.C.	2005	Doherty, Steven	WWT, III	Vancouver, B.C.
3071	Blackwell, Darren	WWC, I	Saanichton, B.C.	1430	Doull, Murray	WWC, II	Maple Ridge, B.C.
1813	Blaeser, Kevin	CH	Vernon, B.C.	1280	Dave, Alan	CH	North Vancouver, B.C.
1277	Bogart, Morris	WWC, I	Aldergrove, B.C.	1815	Drapeau, Denis	WD, II	Fort St. Nelson, B.C.
1396	Bosscha, Jordy	WD, I	Keremeos, B.C.	1197	Dube, John	WD, II	Williams Lake, B.C.
1910	Bourne, Paul	WD, II	Penticton, B.C.	1019	Dunham, Matt	WD, II	Deroche, B.C.
3082	Bouwman, Gregory	WD, I	Vernon, B.C.	1382	Dunphy, Malcolm	WWT, III	Aldergrove, B.C.
3107	Bowcott, Robert	WD, I	North Saanich, B.C.	3101	Eberle, Wayne	WD, I	Kelowna, B.C.
3072	Bowker, Benjamin	WWC, I	Victoria, B.C.	1967	Eckert, Dennis	WWC, II	Victoria, B.C.
1867	Boyles, Terence	WWT, I	Cobble Hill, B.C.	727	Ellington, David	OIT, WT	Enderby, B.C.
1267	Bradley, Jason	CH	Burnaby, B.C.	3046	Ellison, Todd	WD, I	Burnaby, B.C.
1101	Bradshaw, Glen	WWT, II	Richmond, B.C.	967	Engelberts, Joe	WWT, II	Williams Lake, B.C.
1976	Brisbin, Larry	WWC, II	Maple Ridge, B.C.	3047	Faint, Rowan	WD, I	Kamloops, B.C.
1791	Brown, Brian	WD, II	Sidney, B.C.	1948	Ferguson, Stan	WD, II	Errington, B.C.
1941	Brown, Christopher	WWT, II	Nanoose Bay, B.C.	1849	Fitton, John	WD, II	Delta, B.C.
1986	Brown, Steven	WWC, II	Cobble Hill, B.C.	586	Forscutt, Dave	CH	Gibsons, B.C.
833	Bruce, Robert	OIT, WWT	Saturna Island, B.C.	2031	Fred, Gerald	WD, II	Port Alberni, B.C.
3079	Bryan, Fergus	OIT, WWT	Vernon, B.C.	957	Fruitarol, Mario	WD, II	Surrey, B.C.
1136	Burnett, Alan	WWC, I	Delta, B.C.	3012	Fry, Scott	WWT, I	Surrey, B.C.
3083	Cahoose, Fred	WD, I	Anahim Lake, B.C.	3017	Furlong, Sue	OIT, WT	Enderby, B.C.
3084	Caissie, Don	WD, I	Silverton, B.C.	1563	Galley, Jeffery	WD, II	Chilliwack, B.C.
3044	Camano, Robert	WD, I	Delta, B.C.	3015	Garner, Jeremy	WT, I	Fort St. John, B.C.
3016	Campbell, Robert	WT, I	Winfield, B.C.	3085	Gatt, Ray	WD, I	Powell River, B.C.
1556	Campmans, Peter	WD, I	Heffrey Creek, B.C.	750	Gawne, Kevin	WD, II	Vernon, B.C.
1536	Carter, Brian	WWC, II	Port Coquitlam, B.C.	1324	Gerein, Keith	WWC, I	Winfield, B.C.
3109	Carter, Robert	WT, I	Mill Bay, B.C.	3078	Gerigk, Manfred	OIT, WWT	Port Alberni, B.C.
209	Casey, Derrick	WD, II	Chilliwack, B.C.	1479	Giesbrecht, Kelvin	WD, II	Kelowna, B.C.
1973	Castellano, Domenic	WD, I	Nakusp, B.C.	1613	Giesler, Jeff	WD, II	Chilliwack, B.C.
1848	Chamberland, Joe	WD, II	Coquitlam, B.C.	1603	Gilder, William	WD, II	Vancouver, B.C.
3045	Channell, Deborah	WD, I	Sicamous, B.C.	3086	Gillies, Gregory	WD, I	Duncan, B.C.
3045	Channell, Deborah	CH	Sicamous, B.C.	1978	Gold, David	WD, II	Naramata, B.C.
1977	Chapman, Anthony	WWC, II	Maple Ridge, B.C.	2057	Gurney, Roger	WD, I	Midway, B.C.
1720	Chapman, Dean	WWC, I	Grand Forks, B.C.	1897	Gustafson, Darrell	WD, I	Fort Nelson, B.C.
1720	Chapman, Dean	WWT, I	Grand Forks, B.C.	1897	Gustafson, Darrell	CH	Fort Nelson, B.C.
3116	Cheyne, Gary	WWT, I	Surrey, B.C.	1062	Gutierrez, Jaime	CH	Abbotsford, B.C.
3073	Chura, Daniel	WWC, I	Victoria, B.C.	3126	Halldorson, Arnie	WWC, I	Delta, B.C.
3056	Clagget, Michael	WD, I	Mission, B.C.	1717	Hardy, Robert	WD, I	Sidney, B.C.



# NEW MEMBERS AND UPGRADES

CERT. NO.	NAME	CITY	CERT. NO.	NAME	CITY
483	Harmon, Rod	WT, III Dawson Creek, B.C.	3061	Loker, Rudolf	WWT, I Vancouver, B.C.
1235	Harrison, Jeff	CH Sooke, B.C.	329	Long, Michael	WWT, I Kamloops, B.C.
1535	Hayton, Scott	WD, II Burnaby, B.C.	3040	Looker, Bryan	OIT, WWT Ucluelet, B.C.
3041	Hearsey, James	OIT, WWT Duncan, B.C.	1919	Lundberg, Dave	WWC, II Vancouver, B.C.
1900	Heinrich, Claudia	WWT, II Whistler, B.C.	3123	MacDougall, Grant	WWC, I Langley, B.C.
3125	Heinrich, George	WWC, I Richmond, B.C.	1797	MacDonald, Don	WD, II Victoria, B.C.
2080	Hewson, Alan	WD, II Maple Ridge, B.C.	1729	MacIntyre, Scott	WD, I Pemberton, B.C.
3037	Hiebert, Timothy	OIT, WWT Osoyoos, B.C.	1036	MacKay, Ted	CH Vancouver, B.C.
1601	Hildred, Richard	WWT, I Kelowna, B.C.	2016	Magee, Charlie	CH Mission, B.C.
3010	Hillis, Charles	OIT, WT Hazelton, B.C.	1562	Magl, John	WD, III Saanichton, B.C.
3010	Hillis, Charles	OIT, WD Hazelton, B.C.	1037	Mander, Don	WD, II Richmond, B.C.
3068	Hoadley, Michael	WD, I Victoria, B.C.	1758	Margetson, Shane	WWC, II Delta, B.C.
3038	Hogan, Bob	OIT, WWT Crescent Valley, B.C.	1628	Marleau, Lyle	WD, I Terrace, B.C.
3059	Hogg, Robert	CH Duncan, B.C.	2028	Martin, Daniel	WWT, II Winfield, B.C.
3059	Hogg, Robert	OIT, WWT Duncan, B.C.	302	Mathieu, Robert	WWC, II Sardis, B.C.
3019	Holmes, Donald	WWC, I Coquitlam, B.C.	1289	Mattice, Ken	WWC, I Delta, B.C.
3020	Hopson, Bruce	WWC, I Kamloops, B.C.	3122	Maurer, Donald	WWC, I Burnaby, B.C.
3063	Howe, Scott	OIT, WD Duncan, B.C.	3050	Mayea, Ralph	WD, I Duncan, B.C.
3074	Huckin, Raymond	WWC, I Victoria, B.C.	1132	McDonald, Bruce	WD, II Richmond, B.C.
1510	Hughes, Shawn	WD, III Summerland, B.C.	3032	McIntyre, David	WWT, II Pitt Meadows, B.C.
1510	Hughes, Shawn	WD, II Summerland, B.C.	3032	McIntyre, David	WWT, III Pitt Meadows, B.C.
3113	Hunt, Paul	WD, I North Saanich, B.C.	3032	McIntyre, David	WWT, I Pitt Meadows, B.C.
1475	Hurford, John	CH North Vancouver, B.C.	1705	McKechnie, Tracy	WWT, II Kelowna, B.C.
1255	Hurst, John	WWT, II Abbotsford, B.C.	1397	McLean, Cid	WWT, III Penticton, B.C.
3013	Iluk, David	WWT, I Kelowna, B.C.	3102	McLuskey, Kevin	WD, I Westbank, B.C.
3024	Indyk, Peter	WWC, I Delta, B.C.	3102	McLuskey, Kevin	WWT, I Westbank, B.C.
1837	Ingram, William	WD, II Vernon, B.C.	1470	McNeil, Jason	WWT, II Salmo, B.C.
3039	Johnson, Ian	OIT, WWT Fernie, B.C.	3093	Mellander, Robert	WWC, I Nanaimo, B.C.
3087	Jones, Brian	WD, I Langley, B.C.	3093	Mellander, Robert	WD, II Nanaimo, B.C.
3124	Jorger, Ben	WWC, I Richmond, B.C.	3093	Mellander, Robert	WD, I Nanaimo, B.C.
3099	Joseph, Sean	OIT, WT Vancouver, B.C.	3100	Metcalfe, David	WD, I Kelowna, B.C.
1968	Kelly, Scott	WWC, II Sooke, B.C.	3033	Meyer, Victor	WWT, I Kamloops, B.C.
3075	Kennedy, Clayton	WWC, I Saanich, B.C.	3033	Meyer, Victor	WD, I Kamloops, B.C.
1904	Kennedy, Del	WD, II Kamloops, B.C.	3033	Meyer, Victor	WWT, II Kamloops, B.C.
1945	Kimble, Willard	WWT, II Surrey, B.C.	2019	Michell, Clayton	WD, I Smithers, B.C.
2058	Klassen, Kenneth	WWT, II Ashcroft, B.C.	2019	Michell, Clayton	OIT, WWT Smithers, B.C.
3048	Knape, Theron	WD, I Port Coquitlam, B.C.	1303	Middlemass, Michael	CH North Vancouver, B.C.
3025	Kucera, Kris	WWC, I Vancouver, B.C.	3018	Miller, Brian	OIT, WT Vernon, B.C.
2081	Kuntz, Brian	WD, II Maple Ridge, B.C.	2008	Miller, Gordie	WD, I Kamloops, B.C.
3110	Kuzman, Michael	WWT, I Port Renfrew, B.C.	3095	Miller, Parrish	WD, I Terrace, B.C.
3055	Langdeau, Marcel	WD, I Mission, B.C.	2020	Moore, Floyd	OIT, WT Hazelton, B.C.
1211	Langham, Bruce	WWT, II Kelowna, B.C.	2020	Moore, Floyd	WD, I Hazelton, B.C.
3076	Larocque, Neville	WWC, I Victoria, B.C.	3088	Moray, Ryan	WD, II Kamloops, B.C.
3054	Larose, Maurice	WD, I Mission, B.C.	3088	Moray, Ryan	WD, I Kamloops, B.C.
2097	Lay, Paul	WD, II Vernon, B.C.	1962	Moroz, Bruce	CH Houston, B.C.
3026	Laycock, Lyle	WWC, II Delta, B.C.	2027	Morrison, Jerry	WWT, I Hazelton, B.C.
3026	Laycock, Lyle	WWC, I Delta, B.C.	2022	Morrison, Richard	OIT, WT Hazelton, B.C.
3014	Lee, Herbert	WD, I Vernon, B.C.	2022	Morrison, Richard	WD, I Hazelton, B.C.
3115	Leech, Patrick	OIT, WWT Halfmoon Bay, B.C.	1398	Morton, Brian	WWT, III Nanaimo, B.C.
3051	Lewis, Richard	WWT, I Penticton, B.C.	1718	Murphy, Michael	WWT, II Pitt Meadows, B.C.
3051	Lewis, Richard	WT, III Penticton, B.C.	3005	Newton, Granville	WWT, I North Vancouver, B.C.
3081	Lin, Chun-Te	WWT, I Courtenay, B.C.	1549	Nicholls, Paul	WWT, IV Port Coquitlam, B.C.
1482	Lister, Allan	CH Penticton, B.C.	3121	Nitschke, Bruce	WWC, I North Delta, B.C.
730	Livingstone, Bill	WWT, II Port Coquitlam, B.C.	3049	Nordick, Allen	WWC, I Kamloops, B.C.

# NEW MEMBERS AND UPGRADES

CERT. NO.	NAME		CITY	CERT. NO.	NAME		CITY
3049	Nordick, Allen	WD, I	<i>Kamloops, B.C.</i>	3092	Smith, Rankin	WD, I	<i>Whistler, B.C.</i>
3042	Normand, Clifford	WD, I	<i>Okanagan Falls, B.C.</i>	3119	Smyth, Errol	WWT, I	<i>Mara, B.C.</i>
2059	O'Hanley, Michael	WD, II	<i>Victoria, B.C.</i>	1114	Solomon, Don	WWC, II	<i>Smithers, B.C.</i>
3098	O'Neill, Conor	WWT, I	<i>Richmond, B.C.</i>	1367	Soros, Alf	OIT, WT	<i>Vernon, B.C.</i>
2060	Oliver, Kenneth	WWT, II	<i>Port Hardy, B.C.</i>	1966	Soros, Ross	WWC, II	<i>Maple Ridge, B.C.</i>
1528	Olson, Timothy	WD, II	<i>Powell River, B.C.</i>	3106	St. Luke, Riley	WWC, I	<i>Nanaimo, B.C.</i>
3114	Parker, David	WD, I	<i>Coquitlam, B.C.</i>	3120	Stalker, Douglas	WWT, I	<i>Richmond, B.C.</i>
1611	Parkes, Roger	WWC, I	<i>Enderby, B.C.</i>	1961	Startup, Jason	OIT, WWT	<i>Fruitvale, B.C.</i>
752	Patterson, Allan	WWC, II	<i>Kelowna, B.C.</i>	872	Stearman, Randy	WWC, II	<i>Nanaimo, B.C.</i>
1567	Patterson, Donald	WD, II	<i>Victoria, B.C.</i>	243	Stevens, Gerry	WWT, IV	<i>Winfield, B.C.</i>
3066	Pearson, Suzanne	OIT, WWT	<i>Powell River, B.C.</i>	877	Stewart, David	WWC, II	<i>Courtenay, B.C.</i>
3043	Pecsi, Laszio	WD, I	<i>Port Moody, B.C.</i>	1610	Sullivan, Steven	WT, II	<i>Trail, B.C.</i>
1423	Pedersen, Mike	WWT, I	<i>Nakusp, B.C.</i>	1274	Tamelin, Kelly	WWT, II	<i>Castlegar, B.C.</i>
1423	Pedersen, Mike	WD, II	<i>Nakusp, B.C.</i>	3060	Thomas, John	WWT, I	<i>Kelowna, B.C.</i>
3052	Peel, Robert	WWT, I	<i>Enderby, B.C.</i>	3028	Thomson, Jeff	WWC, I	<i>Surrey, B.C.</i>
1500	Phillips, William	WWT, I	<i>Sicamous, B.C.</i>	1617	Thorburn, Brian	WWT, III	<i>Port Hardy, B.C.</i>
1779	Pistill, Ben	WWC, II	<i>Pitt Meadows, B.C.</i>	1568	Thorne, David	WD, II	<i>Sooke, B.C.</i>
3108	Podolski, Eve	WT, I	<i>Vernon, B.C.</i>	1545	Tilton, Michael	WWT, II	<i>Burnaby, B.C.</i>
1682	Proctor, Kent	WWT, II	<i>Fort Nelson, B.C.</i>	3029	Todd, Tom	WWC, II	<i>Maple Ridge, B.C.</i>
3097	Rahn, Ed	WWT, I	<i>Kelowna, B.C.</i>	3029	Todd, Tom	WWC, I	<i>Maple Ridge, B.C.</i>
1943	Raincock, Grant	WWT, II	<i>Penticton, B.C.</i>	1990	Toews, David	WWC, II	<i>Victoria, B.C.</i>
1571	Rasmuson, Gerry	WWT, II	<i>Salmon Arm, B.C.</i>	3030	Upson, Gary	WWC, I	<i>North Vancouver, B.C.</i>
1571	Rasmuson, Gerry	WWT, I	<i>Salmon Arm, B.C.</i>	500	Van Leersum, Rick	CH	<i>Aldergrove, B.C.</i>
1616	Reilly, Kevin	WWT, II	<i>Calgary, Alberta</i>	2078	Veasey, Daryl	WD, II	<i>Maple Ridge, B.C.</i>
1311	Roberts, Michael	WWC, II	<i>North Vancouver, B.C.</i>	3112	Venturas, Byron	WD, I	<i>Vancouver, B.C.</i>
3077	Robichaud, Smokey	WWC, I	<i>Victoria, B.C.</i>	3129	Vester, Clint	WWC, I	<i>Burnaby, B.C.</i>
3089	Rodocanachi, Zoe	WD, I	<i>Tofino, B.C.</i>	1942	Villanueva, Arvel	WWT, II	<i>Vancouver, B.C.</i>
1989	Rose, Terrance	WWC, II	<i>Victoria, B.C.</i>	3053	Villeneuve, Bob	WD, I	<i>Maple Ridge, B.C.</i>
3105	Roulston, Wayne	WWC, I	<i>Nanaimo, B.C.</i>	1951	Villeneuve, John	WT, I	<i>Fort Nelson, B.C.</i>
1293	Rowley, Shawn	WWC, II	<i>Whistler, B.C.</i>	3031	Vincent, Edward	WWC, I	<i>Maple Ridge, B.C.</i>
3021	Rutley, Linda	WWC, I	<i>Kamloops, B.C.</i>	1431	Waites, Peter	WWT, II	<i>Powell River, B.C.</i>
1153	Salsbury, Scott	WWC, II	<i>Abbotsford, B.C.</i>	3035	Warnick, Daryl	WWT, I	<i>Kimberlay, B.C.</i>
164	Samis, David	CH	<i>Tsawwassen, B.C.</i>	1494	Warnock, Miles	WWT, II	<i>Vancouver, B.C.</i>
1342	Saunders, William	CH	<i>Surrey, B.C.</i>	3034	Watt, Sandy	WWT, I	<i>Gold River, B.C.</i>
3027	Savenkoff, Peter	WWC, I	<i>Maple Ridge, B.C.</i>	3034	Watt, Sandy	WWT, II	<i>Gold River, B.C.</i>
1730	Schimek, Peter	WD, I	<i>Pemberton, B.C.</i>	1954	Webb, Harvey	WWT, I	<i>Anmore, B.C.</i>
3036	Scott, Geoffrey	WWT, I	<i>Surrey, B.C.</i>	638	Webb, Rick	WWT, III	<i>Port Moody, B.C.</i>
3036	Scott, Geoffrey	CH	<i>Surrey, B.C.</i>	134	White, James	WWT, IV	<i>Kelowna, B.C.</i>
1949	Scott, James	WWC, I	<i>Duncan, B.C.</i>	1163	Wilkie, Shane	CH	<i>Cumberland, B.C.</i>
3080	Senior, Charles	WWT, I	<i>Courtenay, B.C.</i>	1163	Wilkie, Shane	WD, II	<i>Cumberland, B.C.</i>
1319	Setticasi, Filippo	WWT, I	<i>North Vancouver, B.C.</i>	1678	Williams, Robert	WWC, II	<i>Pitt Meadows, B.C.</i>
3090	Shepherd, Dennis	WD, I	<i>Hudson's Hope, B.C.</i>	1969	Wilms, Earl	WWC, II	<i>Kamloops, B.C.</i>
1852	Shumka, Travis	WD, II	<i>Brentwood Bay, B.C.</i>	3103	Wilson, Mark	WD, I	<i>Cedar, B.C.</i>
2077	Silva, Valdemar	WD, II	<i>Maple Ridge, B.C.</i>	1315	Wilson, Russell	WD, II	<i>Sidney, B.C.</i>
721	Simia, Larry	WD, II	<i>Kelowna, B.C.</i>	1315	Wilson, Russell	WWC, II	<i>Sidney, B.C.</i>
3091	Simmons, Jerry	WD, I	<i>Slocan, B.C.</i>	3022	Wood, Shane	WWC, I	<i>Kamloops, B.C.</i>
2085	Simon, Lane	WWT, II	<i>Merritt, B.C.</i>	944	Wood, William	WD, II	<i>Mission, B.C.</i>
1547	Skalicky, Ric	WT, I	<i>Revelstoke, B.C.</i>	3118	Woodside, Stephen	WWT, I	<i>Port Moody, B.C.</i>
1667	Skidmore, Dan	WT, II	<i>100 Mile House, B.C.</i>	1238	Woolfs, Joe	CH	<i>Victoria, B.C.</i>
1572	Skinner, Kenneth	WWC, II	<i>Saanichton, B.C.</i>	627	Workman, Randy	WT, II	<i>Trail, B.C.</i>
3062	Smerychynski, Anthon	WWT, I	<i>Richmond, B.C.</i>	1991	Wormald, Thomas	WWC, II	<i>Victoria, B.C.</i>
1104	Smith, Curtis	WWT, III	<i>White Rock, B.C.</i>	1380	Wyse, Robert	WWC, II	<i>Kamloops, B.C.</i>
1608	Smith, Donald	WD, II	<i>Salmon Arm, B.C.</i>				

# Word Games Answers

1  
TOR  
TOE

1. Toronto

2  
ERIF

2. Backfire

3  
CAST  
CAST  
CAST  
CAST

3. Forecast

4  
hiway ruin  
ruin

4. Road to ruin

5  
HOS  
Y T  
RLE

5. Boxed In

6  
STAND  
I

6. I understand

7  
U SIR

7. After you sir

8  
T IOGME

8. Go back in time

9  
GET GET •

9. Get to the point

10  
WHEATHER

10. Bad spell of weather.

11  
mind  
matter

11. Mind over matter

12  
PAY PAY

12. Double pay

13  
ALL WORLD

13. It's a small world after all

14  
NO WAY IT WAYS

14. No two ways about it

15  
Fairy  
Wolf  
Duckling

15. The good, the bad and the ugly

16  
Maud

16. Mad about you

*Winners for the last issue of the Word Games were:*

*Steve Nuttall, District of Kent;*

*Connie Gibson, Gibson's*

*Waterworks Supply in Coquitlam;*

*and Lyle Marleau and Claude*

*Mercereau, City of Terrace.*


## TRUE FACTS!

- Most lipstick contains fish scales.
- No piece of square, dry paper can be folded more than 7 times in half.
- A group of geese on the ground is a gaggle, a group of geese in the air is a skein.
- Clinophobia is the fear of beds.
- The longest record flight of a chicken is 13 seconds.
- Owls are one of the only birds who can see the colour blue.
- Eskimo ice cream is neither icy or creamy.
- Over 2,500 left handed people a year are killed from using products made for right handed people.
- A crocodile always grows new teeth to replace the old teeth.
- A 'jiffy' is an actual unit of time for 1/100th of a second.

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# PERSONAL PROFILE



Bernie Taekema - *Board Director*

Bernie was raised in Smithers B.C. and after graduating from high school, attended a Christian liberal arts college in Iowa, USA, where he graduated with a Bachelor of Arts in Science in May 1982. Soon after arriving back in Smithers, he began working for B.C. Environment in the Pollution Prevention Section. This job centred around the inspection and auditing of sawmills, mines, landfill sites and sewage treatment plants in northwestern B.C. During the summer of 1983, Bernie was sent up to Atlin, B.C., which is located approximately 100 miles south of White Horse, Yukon, on the shores of Atlin Lake. During this time, Bernie inspected and sampled water from the numerous Placer Gold Operations located in the area encompassing Dease Lake, Cassiar and Atlin.

Upon returning to Smithers, Bernie continued to routinely inspect sewage treatment plants and became quite familiar with the various types of plants and processes in northwestern B.C. It was at this time, that he first became involved with the BCWWA and indirectly the EOCP. Gil Bradshaw requested Bernie to help him organize an operator training seminar in Smithers in the summer of 1986, which by accounts of those who can remember that far back, was quite successful.

In the fall of 1986, Bernie moved to Nanaimo B.C. where he continued to work for B.C. Environment. Until 1990, he worked in the municipal section which focused predominantly on sewage treatment plants on Vancouver Island.

In 1989, Bernie was elected to the Board of the EOCP and has been a Board member ever since. For the past several years, he has been responsible for classifying all the collection, distribution and treatment systems in the province. In addition, he has worked with Bill Hyslop in upgrading the sewage treatment classification forms twice in the past six years, assisted in the development of industrial exams for waste water treatment and is presently working with other board members in developing criteria, classification forms and exams for small water and wastewater treatment systems.

Bernie has been married to Joyce for almost ten years and they have three small children. In his spare time, (what spare time? he says), Bernie plays ice hockey in the winter and baseball in the summer.

- PIPELINE SWABBING AND POLY PIGGING
- CROSS CONNECTION SURVEYS
- BACKFLOW PREVENTERS
- LEAK DETECTION
- LEAK REPAIRS
- FLOW TESTS



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# 1999 BCWWA VICTOR M. TERRY AWARD

The Victor Terry award is given by the BCWWA with input from the Environmental Operators Certification Program. The award is presented to an operator who has demonstrated exceptional skill in plant operations and maintenance, and has supported the development of his fellow operators.

This year's recipient is David Sivyer from the Resort Municipality of Whistler. David began his career with municipalities with the City of Terrace in 1974. He held a variety of jobs with the City - mechanic, water and sewer technician, and environmental technician. He has been a certified operator for 22 years; passing his Wastewater Treatment Level I exam in 1977. David is currently a Level III operator.

David's first work as an operator was at Terrace's primary treatment plant where he soon rose to Chief Operator. His responsibilities also included operating the City's water supply. Terrace upgraded to a secondary lagoon system in 1987 and David found a new challenge and position with Mount Layton Hotsprings where he operated a new Hot Springs ozone disinfection system and the small wastewater treatment facility.

In 1991, David heeded the call to "head south", when he joined the staff at the Whistler Wastewater Treatment Plant as an operator, soon after a major upgrade of the Whistler plant. Within one year, he was chosen as the Chief Operator and soon showed his commitment and took "ownership" of the plant. The Whistler plant went through a \$10 million expansion from 1996 to 1998, where once again David showed his strong mechanical ability and innovation to ensure proper system operation.

Throughout David's career as an operator, he has always been supportive of the Operator's Program, as a mentor to new operators and encouraging them to advance their careers. David is always available to help other operators where he can with his experience and knowledge - certainly an operator most worthy of the Vic Terry Award!



*David Sivyer receives the Victor M. Terry Award from Eric Jackson (Conference Chair and EOCP Director) at the BCWWA Conference in Vernon.*

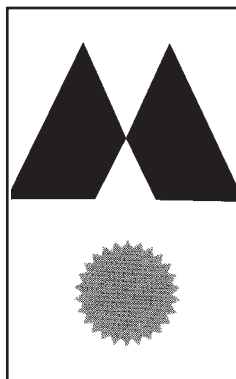


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# THINK SAFETY!

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Once again the Annual Safety Competition was held at the BCWWA Conference in Vernon. This year saw a record six teams entered. The City of Coquitlam team edged out last year's winners from Whistler for the top spot. The other teams participating were the CRD Waterworks from Victoria, Saanich Waterworks, GVRD Water and GVRD Sewer. Thanks to all the teams who participated and to Dave McLean for organizing the competition.



*City of Coquitlam team*



*Whistler team*



*CRD Waterworks from Victoria*



*GVRD Sewer team*



*Saanich Waterworks team*



*GVRD Water team*



*(left) Safety competition at the 1999 BCWWA Conference in Vernon.*

*(right) Mystery Man at the Safety competition.*



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# Word Games!

WIN  
A CAP OR  
A MUG!

*Time to put on your thinking hat. Decipher each box to a common word or expression. The answer to the box on the right is "Blood is thicker than water". The three replies with the most correct answers will each win a cap or a coffee cup - your choice. Mail or fax (604.874.4794) your answers to the Board Office by December 1.*

BLOOD  
WATER

1  
THOUSAND

2  
FLYING RIO

3  
THE  
BUR  
EST

4  
LOOK  
KOOJ  
CROSSING

5  
GRATIS


6  
BONES


7  
SPEECH

8  
IM  
MI  
WI  
DRAWN

9  
BARS


10  
COIN


11  
circumstance  
circumstance  


12  
 ear

13  


14  
OF US IT IT OF US

15  


16  
 BQ



# PLANT PROFILE: District of Salmon Arm

## Water Pollution Control Centre

The District of Salmon Arm operates one of the most advanced wastewater treatment facilities in British Columbia. The process includes primary, secondary, and tertiary treatment using a fixed growth reactor and suspended growth reactor combination (FGR-SGR) for ammonia and phosphorus removal. The Salmon Arm WPCCC is classified by the EOCP as a Level IV plant.



### LIQUID PROCESS

Wastewater from the District is pumped via the Wharf Street pump station to the plant. In the headworks, mechanical screens remove large debris and a cyclone grit separator removes the sand and grit from the raw influent wastewater. The headworks has capacity for 15,000 and eventually 30,000 people. Flow from the headworks enters two primary sedimentation tanks where settling out of the heavier solids occurs. In addition, the primary solids are recirculated within the tanks to enhance production of soluble fermentation products utilized in the downstream biological nutrient removal (BNR) process. Primary sedimentation has capacity for 15,000 people.

Recycle flow from the anoxic tanks and the primary effluent enter the anaerobic tank. The zero dissolved oxygen reactor environment selects for the special microbial biomass needed for the BNR process. The wastewater from the anaerobic tank is combined with the recycle from the secondary clarifier under flow and moves through the anoxic tanks. In this reactor, the nitrates and nitrites are converted to nitrogen gas.

Flow from the anoxic reactors is pumped over the two-stage trickling filter (FGR) system. In the first, carbonaceous stage, FGR, the soluble food substrates are absorbed by the biomass (bacteria) that live on the surface of the media. In the second, nitrifying FGR, the ammonia is utilized by the biofilm and converted to nitrate and nitrite. The continuous growth process of the biomass results in it sloughing off the media and being carried over in suspension to the downstream solids contact tanks.

In the solids contact tanks, the suspended excess biomass is flocculated and aerated by the Turborators. Additional soluble carbon food substrates are also utilized by the biomass.

In the secondary clarifier, the suspended biomass is settled out of the liquid and the clean, clear effluent overflows to the disinfection tank. Return biological solids (RBS) from the settled inflow is pumped to the anoxic tanks, and some is wasted to the solids process train for further treatment. An additional clarifier is to be added in Stage IIIB, to provide capacity for 20,000 people.

The secondary clarifier effluent is then disinfected for a contact time of about an hour. After chlorination, any residual chlorine is chemically stabilized by the addition of sulphur dioxide. This protects the aquatic life in the lake, as chlorine compounds are harmful. The treated water then flows to Shushwap Lake via a long outfall pipe.

### SOLIDS PROCESS

The Salmon Arm Water Pollution Control Centre uses the auto-thermal, thermophilic aerobic digestion process (ATAD) for solids stabilization. This process produces a high-grade retail use biosolids product which meets EPA 503 standards

Primary solids are collected in the tank sludge hoppers and periodically pumped to the ATAD system. Waste biological solids (WBS) from the under flow from the secondary clarifier are pumped to the drum thickener. In the drum thickener, WBS are thickened from about 1% to about 5% solids and then fed to the ATAD system. The screen has a capacity for 30,000 people. In the four ATAD series reactors, the biosolids are heated and volatilized by over 50% at temperatures about 55 degrees C, producing thin brown slurry high in nutrient value and minerals. The reactors have a capacity for 15,000 people.

The ATAD biosolids are pumped through a cooling coil and into the centrifuge. Polymer is added to the biosolids to aid in the dewatering of the biosolids by the centrifuge. Polymer is added to the biosolids to aid in the dewatering of the biosolids by the centrifuge. The centrifuge dewateres the biosolids to about 35% dry solids. The centrate is treated to remove phosphate and then it is returned to the liquid process train.

Thanks to Mark Steffler, Municipal Engineer, District of Salmon Arm.



*Suspended Growth Reactors (SGR)*



*Mayor Wayne McGrath, of the City of Vernon (on the right), receives the EOCB Corporate Recognition Award from EOCB Director Bill Hyslop, at the BCWWA Conference.*

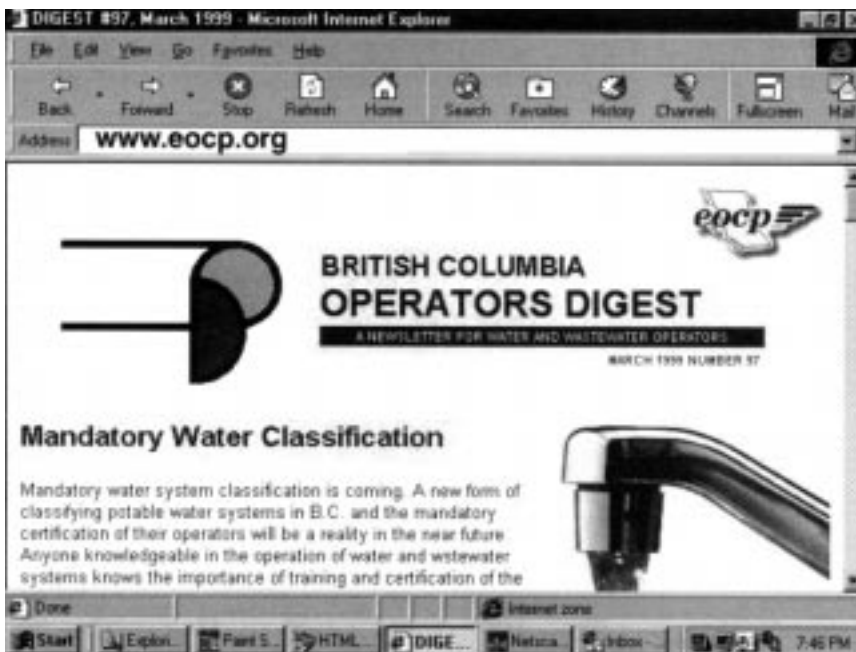
## LOST

The EOCB Board is looking for some missing newsletters. Thanks to Bert Caine, the Board Office has a close to complete set of newsletters starting from issue number one. We are missing issues #10 through to #27 and issue #32. If you have any of these newsletters, please call the Board Office and Barb or Terry will arrange to photocopy the issues we are looking for!

## CLASS IV WASTEWATER PLANTS

Lansdowne Road Wastewater Treatment Centre	City of Prince George
Penticton Advanced Wastewater Treatment Plant	City of Penticton
Kelowna Pollution Control Centre	City of Kelowna
JAMES Pollution Control Centre	Fraser Valley R.D.
Westside Regional Wastewater Treatment Plant	Central Okanagan R.D.
Comox Valley W.P.C.C.	Comox-Strathcona R.D.
French Creek Pollution Control Centre	R.D. Nanaimo
Salmon Arm Water Pollution Control Centre	Salmon Arm
Annacis Island Wastewater Treatment Plant	GVRD
Lulu Island Wastewater Treatment Plant	GVRD
Swan-e-set Bay Golf Club WWTP	Pitt Meadows
David S. McKay WWTP	City of Vernon
Port Alice Pulp Mill	Port Alice
Whistler Wastewater Treatment Plant	Whistler

[www.eocp.org](http://www.eocp.org)



The EOCB has a new email and web page address. To find the web page, type in [www.eocp.org](http://www.eocp.org). The EOCB has had a web page since 1995 and has made some changes recently. The Digest newsletter is available for downloading in .pdf format, which allows for viewing, saving and printing the Digest as the printed copy appeared. Also available for downloading are the Exam Application Form and the Program Guide. The Board Office email address is [eocp@eocp.org](mailto:eocp@eocp.org).

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# UPCOMING EVENTS

## CALENDAR OF WORKSHOPS AND MEETINGS

November 1 - 5

Kamloops Workshop

*Five Day Courses*

- *Wastewater Treatment Level II and Level III*
  - *Water Distribution Level II*
  - *Wastewater Collection Level II*

*One Day Courses*

- *Hydrants - Nov. 1*
- *Basic SCADA Systems - Nov. 2*
- *New WCB Regulations - Nov. 3*

November 15-17

Vancouver Island Workshop (Saanich)

- *Water Quality from Source to Distribution*

November 17-18

Meeting B.C.'s New Municipal Sewage Regulation Through Infrastructure Management (Burnaby)

*For information or registration on the above, please contact the BCWWA Office; phone (604) 540-0111, fax (604) 540-4077.*



*EOCP Office Assistant Terry Thrun shown standing in front of the display unit at the BCWWA Conference in Vernon.*