

Quarterly Oil and Gas Water Management Summary



Third Quarter 2019 (Jul - Sept)



PURPOSE

This *Quarterly Oil and Gas Water Management Summary* presents short-term water use and water licence data from the Q3 July to September 2019 period.

Previous annual water use reports and quarterly water management summaries are available on the BC Oil and Gas Commission website at www.bcogc.ca.

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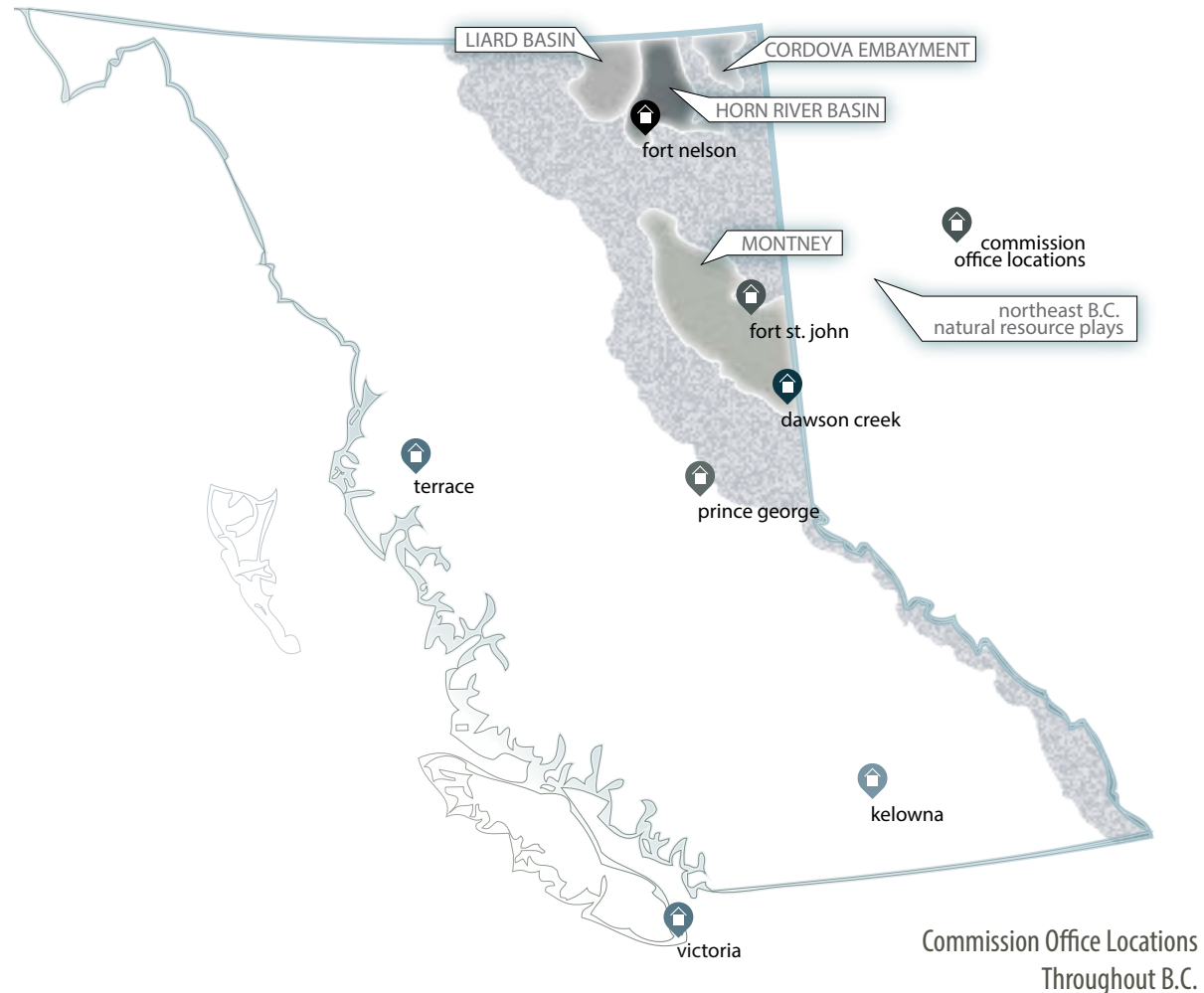
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BC OIL AND GAS COMMISSION

The [BC Oil and Gas Commission](#) (Commission) is the provincial regulatory agency with responsibilities for regulating oil and gas activities in British Columbia, including exploration, development, pipeline transportation and reclamation.

The Commission's core services include reviewing and assessing applications for industry activity, consulting with First Nations, cooperating with partner agencies, and ensuring industry complies with provincial legislation and all regulatory requirements. The public interest is protected by ensuring public safety, respecting those affected by oil and gas activities, conserving the environment, and ensuring equitable participation in production.

The Commission is responsible for reviewing, assessing, and making decisions on water authorizations from both surface and subsurface water sources. The Commission has the expertise and tools to make informed water allocation decisions, and protecting and maintaining environmental and community water needs are its first priorities.



HOW WATER IS USED

Water is used for various purposes in the oil and gas industry.



The largest use of water for oil and gas activities is for hydraulic fracturing.

However, water is used for other purposes, such as:



Seismic or geophysical exploration



Drilling



Machine washing



Dust control



Water floods (to enhance oil recovery)



Ice road freezing



Hydrostatic testing of pipelines

HOW WATER IS ACCESSED

There are different ways the oil and gas industry may access water in British Columbia. Some methods are managed through provincial legislation, including:

- **Water licences** issued under the Water Sustainability Act (WSA) for surface and groundwater. The Commission has staff designated as Regional Water Managers with authority for issuing and administering long-term water licences.
- **Short-term surface water use or diversion approvals** issued under Section 10 of the WSA. Short-term water use is administered by the Commission.
- **Water source wells** authorized by the Commission under the Oil and Gas Activities Act (OGAA). Water source wells are a specific type of well where the water withdrawn is intended for injection into an underground formation to enhance oil or natural gas recovery.
- **Flowback water** that returns to the surface after being injected for hydraulic fracturing.
- **Produced water** that flows to the surface as a by-product of oil and gas production.

The oil and gas industry can access water by means outside of regulatory oversight:



- **Private agreements** can be made with land owners or others who have a source of surface water supply such as a dugout or a groundwater well. In some cases, private agreements may require a Waterworks water licence under the WSA.

SHORT-TERM WATER APPROVAL AND USE

During July to September of 2019, there were a total of 267 short-term water use approvals in place, representing 571 withdrawal locations, held by 43 companies (Table 1).

The total water volume associated with short-term approvals active on the last day of the quarter was 12,458,574 m³.

A total of 1,109,121 m³ was reported as withdrawn by oil and gas operators during the first three quarters of 2019.

TABLE 1 - SUMMARY OF SHORT-TERM APPROVAL AND USE FOR OIL AND GAS ACTIVITIES FROM JANUARY TO SEPTEMBER 2019

	Q1	Q2	Q3	
SHORT-TERM	Companies with Active Approvals	46	*44	43
	Active Approvals	201	239	267
	Approved Withdrawal locations	623	*575	571
	Volume Available for Use (m ³)	12,781,913	*12,270,357	12,458,574
	Cumulative Volume Reported Withdrawn (m ³)	313,178	647,292	1,109,121

A break-down of short-term water approval and use by OGC Water Management Basin is listed in Table 4.

LONG-TERM WATER LICENCES AND USE

In the third quarter of 2019, there were 74 active oil and gas related water licences, representing 79 withdrawal locations, held by 19 companies (Table 2).

The total annual licenced water volume was 29,521,425 m³.

A total of 2,530,827 m³ of licenced water was reported as withdrawn in the first three quarters of the year by 19 companies (Table 3).

TABLE 2 - SUMMARY OF WATER LICENCE AND USE FOR OIL AND GAS ACTIVITIES FROM JANUARY TO SEPTEMBER 2019

	Q1	Q2	Q3	
WATER LICENCE	Companies with Active Water Licences	15	18	19
	Active Water Licences	57	72	74
	Licensed Withdrawal Locations	60	77	79
	Annual Volume Available for Use for Water Licences (m ³)	26,822,997	29,326,444	29,521,425
	Cumulative Volume Reported Withdrawn (m ³)	464,272	1,759,139	2,530,827

A break-down of water licence allocation and use by OGC Water Management Basin is listed in Table 4.

*Updated (retroactive data entry).

TABLE 3: OIL AND GAS RELATED WATER LICENCES THAT WITHDREW WATER FROM JULY TO SEPTEMBER 2019

LICENCE #	LICENCEE	SOURCE	OGC WATER MGMT BASIN	ANNUAL APPROVAL (m ³ /YR)	2019 WATER USE (m ³ /YR)
C112155	Whitecap Resources Inc.	Peace River	Lower Peace River	1,825,000	144,390
C132688	Canadian Natural Resources Limited (CNRL)	Charlie Lake	Lower Beatton River	394,000	415
C133155	Pacific Canbriam Energy	Williston Lake	Peace Arm	3,650,000	4,517
C133847	Petronas Energy Canada	Unnamed Stream	Cameron River	7,374	650
C133853	Petronas Energy Canada	Unnamed Tributary	Middle Sikanni Chief	7,264	172
C134054	Black Swan Energy	Beatton River Intake B	Upper Beatton River	780,000	138,638
C134093	Petronas Energy Canada	Grewatsch Tributary	Upper Beatton River	54,368	996
C134111	Petronas Energy Canada	Unnamed Stream	Upper Beatton River	49,588	1,705
C134469	ConocoPhillips Canada	Halfway River	Lower Halfway River	3,650,000	303,965
C500226	Veresen Energy Pipeline	Aquifer 621	Smoky River	5,500	825
C500341	Petronas Energy Canada	FSJ Aquifer	Cameron River	2,253	620
C500349	Petronas Energy Canada	FSJ Aquifer	Lower Halfway River	10,463	358
C500449	Kelt Exploration Ltd.	Aquifer 451	Cache Creek	146,000	24,474
C500453	Kelt Exploration Ltd.	Aquifer 451	Cache Creek	160,235	31,654
C500662	ARC Resources Ltd.	Kiskatinaw River	Lower Kiskatinaw River	1,100,000	97,640
C500678	Todd Energy Canada Ltd.	FSJ Aquifer	Blueberry River	146,000	5,575
C500794	Petronas Energy Canada	FSJ Aquifer	Upper Beatton River	6,924	60
C501073	Petronas Energy Canada	FSJ Aquifer	Cameron River	6,240	68
C501076	Encana Corporation	Bissette/Dawson Ck Aquifer	Pouce Coupe River	482,000	13,488
C501120	Canlin Energy Corp.	FSJ Aquifer	Upper Beatton River	1,825	50
C501135	CNRL	Aquifer 451	Blueberry River	1,825	298
C501206	CNRL	Dawson Creek Bedrock	Murray River	730	163
C501207	CNRL	FSJ Aquifer	Kahntah River	2,555	552
C501210	CNRL	FSJ Aquifer	Kahntah River	365	55
C501211	CNRL	FSJ Aquifer	Upper Beatton River	730	165
C501212	CNRL	Dawson Creek Aquifer	Smoky River	1,095	184
C501270	Black Swan Energy Ltd.	FSJ Aquifer	Upper Beatton River	6,570	4

TABLE 4 - SUMMARY OF WATER ALLOCATION AND USE FOR OIL AND GAS ACTIVITIES IN 2019, ORGANIZED BY OGC WATER MANAGEMENT BASIN (Page 1 of 4)

MAJOR and Sub-Basin Name	SHORT-TERM WATER USE APPROVALS - BC OIL AND GAS COMMISSION					OIL AND GAS RELATED WATER LICENCES					
	NUMBER OF APPROVED WITHDRAWAL LOCATIONS	TOTAL VOLUME APPROVED (m ³) FOR LOCATIONS ACTIVE ON 9/30/2019	TOTAL VOLUME APPROVED as % of MEAN ANNUAL RUNOFF	TOTAL VOLUME WITHDRAWN IN 2019 (m ³)	TOTAL VOLUME WITHDRAWN AS % OF MEAN ANNUAL RUNOFF	NUMBER OF LICENCED WITHDRAWAL LOCATIONS	TOTAL VOLUME LICENCED (m ³)	TOTAL VOLUME LICENCED as % of MEAN ANNUAL RUNOFF	TOTAL VOLUME WITHDRAWN IN 2019 (m ³)	TOTAL VOLUME WITHDRAWN as % of MEAN ANNUAL RUNOFF	MEAN ANNUAL RUNOFF (m ³)
BEATTON RIVER (sub-basin of Peace River)											
Upper Beatton River	12	235,480	0.047%	22,852	0.005%	18	2,089,459	0.418%	144,233	0.029%	499,408,440
Middle Beatton River	1	18,000	0.007%	0	0.000%	0					249,152,995
Middle Beatton Total (incl. Upper Beatton)	13	253,480	0.034%	22,852	0.003%	18	2,089,459	0.279%	144,233	0.019%	748,561,435
Milligan Creek	5	42,000	0.022%	375	0.000%	0					191,536,686
Blueberry River	41	1,464,722	0.499%	142,238	0.048%	4	197,100	0.000%	6,209	0.000%	293,278,540
Doig River	6	46,000	0.014%	0	0.000%	0					323,069,523
Lower Beatton River	32	391,425	0.283%	36,504	0.026%	1	394,000	0.285%	12,797	0.009%	138,262,629
BEATTON TOTAL	97	2,197,627	0.130%	201,969	0.012%	23	2,680,559	0.158%	163,239	0.010%	1,694,708,813
HALFWAY RIVER (sub-basin of Peace River)											
Chowade River	0					0					327,027,527
Upper Halfway River	0					0					795,962,409
Upper Halfway Total (includes Chowade)	0	0	0.000%	0	0.000%	0	0	0.000%	0	0.000%	1,122,989,936
Graham River	2	3,450	0.000%	0	0.000%	0					860,627,172
Cameron River	31	1,604,530	0.476%	117,250	0.052%	12	667,894	0.299%	3,609	0.002%	223,679,567
Lower Halfway River	17	1,041,399	0.687%	97,697	0.064%	7	3,838,688	2.533%	1,181,068	0.779%	151,526,991
HALFWAY TOTAL	50	2,109,379	0.089%	214,947	0.009%	19	4,506,582	0.191%	1,184,677	0.050%	2,358,823,666
MOBERLY RIVER (sub-basin of Peace River)											
Moberly River	5	55,631	0.014%	19,249	0.005%	0					391,714,995
MOBERLY TOTAL	5	55,631	0.000%	19,249	0.005%	0	0	0.000%	0	0.000%	391,714,995
PINE RIVER (sub-basin of Peace River)											
Burnt River	0					0					737,930,022
Sukunka River	0					0					1,047,282,572
Sukunka River Total (includes Burnt)	0	0	0.000%	0	0.000%	0	0	0.000%	0	0.000%	1,785,212,594
Upper Pine River	1	10,000	0.001%	2,650	0.000%	0					1,466,884,035
Murray River	3	20,850	0.001%	0	0.000%	1	730	0.000%	328	0.000%	2,698,285,017
Lower Pine River	34	563,908	0.410%	77,105	0.056%	1	650,000	0.472%	0	0.000%	137,619,889
PINE TOTAL	38	594,758	0.019%	79,755	0.001%	2	650,730	0.011%	328	0.000%	6,088,001,535

SHORT-TERM WATER USE APPROVALS - BC OIL AND GAS COMMISSION

OIL AND GAS RELATED WATER LICENCES

MAJOR and Sub-Basin Name	NUMBER OF APPROVED WITHDRAWAL LOCATIONS	TOTAL VOLUME APPROVED (m ³) FOR LOCATIONS ACTIVE ON 9/30/2019	TOTAL VOLUME APPROVED as % of MEAN ANNUAL RUNOFF	TOTAL VOLUME WITHDRAWN IN 2019 (m ³)	TOTAL VOLUME WITHDRAWN AS % OF MEAN ANNUAL RUNOFF	NUMBER OF LICENCED WITHDRAWAL LOCATIONS	TOTAL VOLUME LICENCED (m ³)	TOTAL VOLUME LICENCED as % of MEAN ANNUAL RUNOFF	TOTAL VOLUME WITHDRAWN IN 2019 (m ³)	TOTAL VOLUME WITHDRAWN as % of MEAN ANNUAL RUNOFF	MEAN ANNUAL RUNOFF (m ³)
KISKATINAW RIVER (sub-basin of Peace River)											
West Kiskatinaw River	0					0					117,515,115
East Kiskatinaw River	0					0					105,452,962
Middle Kiskatinaw River	6	98,296	0.174%	404	0.001%	1	600,000	0.000%	105,612	0.000%	56,347,972
Middle Kiskatinaw Total (incl. West & East)	6	98,296	0.035%	404	0.000%	1	600,000	0.215%	105,612	0.038%	279,316,049
Lower Kiskatinaw River	23	1,017,538	1.135%	65,256	0.073%	6	2,618,100	2.920%	405,564	0.452%	89,659,847
KISKATINAW TOTAL	29	1,115,834	0.302%	65,660	0.018%	7	3,218,100	0.872%	511,266	0.139%	368,975,896
PEACE RIVER											
Peace Arm	0					3	9,125,000	0.000%	7,629	0.000%	N/A
Upper Peace River	5	859,313	0.002%	42,496	0.000%	0					36,423,413,429
Lynx Creek	3	43,996	0.145%	0	0.000%	0					30,436,635
Farrell Creek	7	271,644	0.298%	20,310	0.022%	0					91,018,843
Cache Creek	6	107,000	0.143%	52,567	0.070%	3	491,235	0.658%	182,935	0.245%	74,603,546
Pouce Coupe River	23	1,161,866	0.454%	175,567	0.069%	4	1,650,200	0.645%	14,970	0.006%	255,686,202
Lower Peace River	17	1,451,912	1.268%	112,809	0.099%	5	3,907,469	3.414%	461,100	0.403%	114,470,012
PEACE TOTAL (incl. Kisk/Pine/Moberly/Half/Beaton)	280	9,968,960	0.021%	985,329	0.002%	66	26,229,875	0.055%	2,526,144	0.005%	47,891,853,572
SMOKY RIVER											
Smoky River	3	9,000	0.000%	0	0.000%	2	6,595	0.000%	3,172	0.000%	2,669,506,123
SMOKY TOTAL	3	9,000	0.000%	0	0.000%	2	6,595	0.000%	3,172	0.000%	2,669,506,123
MUSKWA RIVER (sub-basin of Fort Nelson River)											
Upper Muskwa River	0					0					1,725,201,511
Middle Muskwa River	0					0					1,973,711,816
Middle Muskwa Total (incl. Upper Muskwa)	0	0	0.000%	0	0.000%	0	0	0.000%	0	0.000%	3,698,913,327
Lower Muskwa River	1	50	0.000%	522	0.000%	0					646,841,560
MUSKWA TOTAL	1	50	0.000%	522	0.000%	0	0	0.000%	0	0.000%	4,345,754,887
PROPHET RIVER (sub-basin of Fort Nelson River)											
Upper Prophet River	1	1,500	0.000%	60	0.000%	1	36,593	0.002%	0	0.000%	1,470,271,289
Middle Prophet River	5	30,700	0.005%	63	0.000%	0					621,428,680
Middle Prophet Total (incl. Upper Prophet)	6	32,200	0.002%	123	0.000%	1	36,593	0.002%	0	0.000%	2,091,699,969
Lower Prophet River	1	3,900	0.001%	4,080	0.001%	0					272,262,427
PROPHET TOTAL	7	36,100	0.002%	4,203	0.000%	1	36,593	0.002%	0	0.000%	2,363,962,396

SHORT-TERM WATER USE APPROVALS - BC OIL AND GAS COMMISSION

OIL AND GAS RELATED WATER LICENCES

MAJOR and Sub-Basin Name	NUMBER OF APPROVED WITHDRAWAL LOCATIONS	TOTAL VOLUME APPROVED (m ³) FOR LOCATIONS ACTIVE ON 9/30/2019	TOTAL VOLUME APPROVED as % of MEAN ANNUAL RUNOFF	TOTAL VOLUME WITHDRAWN IN 2019 (m ³)	TOTAL VOLUME WITHDRAWN AS % OF MEAN ANNUAL RUNOFF	NUMBER OF LICENCED WITHDRAWAL LOCATIONS	TOTAL VOLUME LICENCED (m ³)	TOTAL VOLUME LICENCED as % of MEAN ANNUAL RUNOFF	TOTAL VOLUME WITHDRAWN IN 2019 (m ³)	TOTAL VOLUME WITHDRAWN as % of MEAN ANNUAL RUNOFF	MEAN ANNUAL RUNOFF (m ³)
SIKANNI CHIEF RIVER (sub-basin of Fort Nelson River)											
Upper Sikanni Chief River	0					3	3,117,689	0.386%	0	0.000%	807,771,692
Middle Sikanni Chief River	30	270,583	0.028%	66,544	0.007%	4	29,203	0.003%	302	0.000%	949,755,794
Middle Sikanni Chief Total (incl. Upper Sikanni)	30	270,583	0.015%	66,544	0.004%	7	3,146,892	0.179%	302	0.000%	1,757,527,486
Lower Sikanni Chief	10	54,136	0.006%	7,685	0.001%	0					875,678,142
SIKANNI CHIEF TOTAL	40	324,719	0.012%	74,229	0.003%	7	3,146,892	0.120%	302	0.000%	2,633,205,628
FORT NELSON RIVER											
Kahntah River	30	168,248	0.000%	0	0.000%	2	2,920	0.000%	1,208	0.000%	400,582,903
Fontas River	5	41,700	0.007%	0	0.000%	0					591,531,903
Fontas Total (includes Kahntah)	35	209,948	0.021%	0	0.000%	2	2,920	0.000%	1,208	0.000%	992,114,806
Klua Creek	0					0					402,135,448
Upper Fort Nelson River	0					0					276,181,026
Upper Fort Nelson Total (incl. Sikanni Chief Total, Kahntah, Fontas, Klua)	75	534,667	0.012%	74,229	0.002%	9	3,149,812	0.073%	1,510	0.000%	4,303,636,908
Snake River	1	4,200	0.001%	195	0.000%	0					310,763,522
Sahtaneh River	12	56,156	0.012%	595	0.000%	0					474,904,729
Middle Fort Nelson River	6	15,000	0.003%	4,207	0.001%	0					515,348,901
Middle Ft Nelson Total (incl. Upper Ft. Nelson total, Muskwa Total, Prophet Total, Snake, Sahtaneh)	102	646,173	0.005%	83,951	0.001%	10	3,186,405	0.026%	1,510	0.000%	12,314,371,343
Kiwigana River	8	45,000	0.010%	0	0.000%	0					441,657,543
Lower Fort Nelson River	0					0					312,768,938
FORT NELSON TOTAL	110	691,173	0.005%	83,951	0.001%	10	3,186,405	0.024%	1,510	0.000%	13,068,797,824
LIARD RIVER											
Muncho River	0					0					551,551,360
Upper Liard River	0					0					33,125,817,465
Upper Liard Total (incl. Muncho)	0	0	0.000%	0	0.000%	0	0	0.000%	0	0.000%	33,677,368,825
Grayling River	0					0					630,833,914
Upper Toad River	0					0					1,521,055,576
Racing River	0					0					1,488,336,681
Lower Toad River	0					0					419,472,722
Beaver River	0					0					10,862,659,426
Middle Liard River	0					0					463,652,312

SHORT-TERM WATER USE APPROVALS - BC OIL AND GAS COMMISSION

OIL AND GAS RELATED WATER LICENCES

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LIARD RIVER con't											
Middle Liard Total (incl. Upper Liard Total, Grayling, Upper Toad, Racing, Lower Toad, Beaver)	0	0	0.000%	0	0.000%	0	0	0.000%	0	0.000%	49,063,379,456
Capot-Blanc Creek	0					0					183,879,851
Dunedin River	0					0					820,464,167
Lower Liard River	0					0					1,236,634,664
LIARD TOTAL (incl. Fort Nelson)	110	691,173	0.001%	83,951	0.000%	10	3,186,405	0.005%	1,510	0.000%	64,373,155,962
PETITOT RIVER											
Sahdoanah River	11	39,800	0.016%	3,014	0.001%	0					252,625,362
Upper Petitot River	38	108,200	0.007%	0	0.000%	0					1,476,579,488
Tsea River	29	187,734	0.043%	13,568	0.003%	0					434,062,484
Middle Petitot River	16	61,300	0.009%	0	0.000%	0					698,562,753
Middle Petitot Total (incl. Sahdoanah, Upper Petitot, Tsea)	94	397,034	0.014%	16,582	0.001%	0	0	0.000%	0	0.000%	2,861,830,087
Lower Petitot River	11	140,000	0.015%	0	0.000%	0					904,314,069
PETITOT TOTAL	105	537,034	0.014%	16,582	0.000%	0	0	0.000%	0	0.000%	3,766,144,156
HAY RIVER											
Upper Kotcho River	1	20,000	0.006%	162	0.000%	0					311,519,217
Kyklo River	4	20,600	0.014%	0	0.000%	0					145,897,691
Shekilie River	27	158,940	0.035%	0	0.000%	0					450,747,494
Lower Kotcho River	1	3,000	0.001%	2,378	0.001%	0					311,519,217
Lower Kotcho Total (includes Upper Kotcho, Kyklo, Shekilie)	33	202,540	0.017%	2,540	0.000%	0	0	0.000%	0	0.000%	1,219,683,619
Hay River	4	40,000	0.007%	1,837	0.000%	0					538,672,352
HAY TOTAL	37	242,540	0.014%	4,377	0.000%	0	0	0.000%	0	0.000%	1,758,355,971
CHINCHAGA RIVER											
Chinchaga River	2	1,000	0.001%	0	0.000%	0					109,492,680
CHINCHAGA TOTAL	2	1,000	0.001%	0	0.000%	0	0	0.000%	0	0.000%	109,492,680
OTHER (outside Northeast B.C.)	30	920,780	0.000%	18,882	0.000%	1	98,550		0		N/A
GRAND TOTAL	567	12,370,487	0.010%	1,109,121	0.001%	79	29,521,425	0.024%	2,530,827	0.002%	120,568,508,464



Previous annual water reports and quarterly updates
are available on the Commission's website at:
<http://www.bcogc.ca/public-zone/water-information>

For specific questions or enquiries
regarding this data, please contact:
OGC.Communications@bcogc.ca
