FINAL MEETING MINUTES

Interagency Study Planning meeting, Blue Lake Hydroelectric Project (FERC No. 2230) Relicensing

Alaska Department of Fish and Game, Douglas Office

Meeting Date: April 24, 2003

Final Minutes: June, 2003

These minutes, having been reviewed in draft by all attendees, reflect discussions during the subject meeting. Draft minutes were distributed to attendees on April 29, 2003. Comments were received from three agencies by June 18, 2003. All comments were incorporated, as described in Attachment I.

The meeting convened at 10:00 am, as scheduled. In attendance were:

John Dunker, Alaska Department of Natural Resources (ADNR)
Bob Chadwick, Alaska Department of Fish and Game (ADF&G)
Clayton Hawkes, ADF&G
Kevin Brownlee, ADF&G
John Der Hovanisian, ADF&G
Roger Harding, ADF&G
Richard Enriquez, US Fish and Wildlife Service (FWS)
Larry Peltz, National Marine Fisheries Service (NMFS)
Ken Coffin, US Forest Service (USFS)
Karl Wolfe, City of Sitka Fisheries and Wildlife Consultant
Lorraine Marshall, Alaska Department of Natural Resources (ADNR)
Dean Orbison, City of Sitka
Mike Prewitt, City of Sitka Relicensing Consultant

Via conference phone at ADF&G Anchorage were:

Christopher Estes
Joe Klein
Jason Mouw

Dean Orbison opened the meeting by welcoming the attendees and asking for introductions. He said that the purpose of the meeting would be to discuss general and detailed aspects of certain studies required for relicensing of the Project. He said that the City would provide draft minutes of the meeting to all attendees for review.

Dean said that the City had decided not to pursue any alternative to raise the Project dam on relicensing. He said the City's economic analyses did not support the costs of the change relative to the generation benefits gained.

Richard asked if there was a possibility that FERC would require evaluation of dam raising, even if the City didn't include it. Mike said that the "Applicant's Proposal" would not include dam raising, and that he didn't believe that FERC would add it if the City and agencies had agreed that it wasn't needed. Mike said he would call Nick Jayjack at FERC (Blue Lake project manager) and ask about Richard's question. (Mike spoke with Nick on 4/29/03, and Nick said that FERC would normally take its cue from resource agencies regarding the need for additional alternatives. In this case, it didn't sound like agencies favored dam raising and that it might in fact increase overall environmental impact. He said he doubted that FERC would require keeping it as an alternative which required further evaluation).

Dean said that the City was developing a website for access to relicensing proceedings, documents, etc. He said it would be available soon.

Mike then described the purpose of the meeting in more detail, saying that there were two resources (fisheries and wildlife) for which the City wished to finalize study plans as soon as possible to allow work to start or continue during 2003. He said that the agenda also included Water Resources, which would be discussed more generally.

Mike asked about the order of Agenda items, and it was decided that Wildlife would be discussed first, followed by Water Resources, then Fisheries.

Wildlife

Beginning with Wildlife, Mike said that, for each of the draft study plans which the City had prepared, the discussions were to address any major comments (e.g., items which agencies wished to add or delete from the draft plans), followed by detailed comments on the study elements included in the Plans.

Mike said that the format for detailed discussion would be to follow the major topics in the draft study plan. He said that the City was responsible for conducting a literature review, and said that the City would appreciate any literature regarding wildlife in the Project area which the agencies might have.

He said that the wildlife studies, since the Project footprint would not be changed on relicensing, would be primarily observational, and would mostly be done by fisheries researchers during the times when they were working on Sawmill Creek and Blue Lake. Mike said that this would entail roughly weekly surveys on Sawmill Creek from April through December each year, and would equate to about 20 to 30 days per year on Blue Lake, depending on the final intensity of the Blue Lake fisheries surveys, to be discussed later in the day.

Mike added that it was important for the agencies to approve of the wildlife observation abilities of the fisheries researcher, who would most likely be Karl Wolfe, in attendance. Richard asked Karl for a brief description of his background, and Karl indicated that he

had Natural Resources and Fisheries degrees and had worked for ADF&G and NSRAA. He said he was active as an amateur birder, and had participated in local birding and bird counting events in the Sitka area. There was general approval of Karl's qualifications.

Kevin and Ken both expressed concern that, as described, the wildlife surveys appeared to be "incidental" rather than "dedicated", and said that they would prefer to see a more structured wildlife observation program. Mike said that the proposed observation studies were to be added to the work scope of the fisheries researcher(s), not just done within the current time allotted. There was general agreement that the proposed observation studies would be acceptable within this definition.

Dean said that, in terms of study area, there was not much country which could be accessed, on either Sawmill Creek or around Blue Lake, by foot. He said that once you got away from the Creek or the shoreline, the steep country and dense vegetation prevented safe movement. He added that he had spent quite a bit of time in both areas hiking, hunting and fishing, and that he hadn't seen much wildlife once he got a few yards away from the water.

Clayton said he thought that a boat survey from Blue Lake should be sufficient to observe wildlife in the steep areas near the lake. Mike added that the boat surveys would be done around the entire lake, probably while the fish traps (to be used for Blue Lake population studies) were soaking. There was general agreement that the wildlife observations done at the times when fisheries researchers were in the Sawmill Creek and Blue Lake areas would probably work, if they were given sufficient priority in addition to fish surveys

Mike added that, prior to preparation of wildlife reports, the City would employ a professional wildlife biologist to review reports and sections of the application material.

Richard asked about endangered species, particularly birds, and said that FWS had protocols for endangered bird studies. Mike asked if there were any listed species in the area, and Richard said no, but that there might be threatened species. Mike mentioned northern goshawk, and Clayton said he thought it was a sensitive species. Richard said that FWS had guidelines for surveys for certain bird species and that the City should obtain them.

Mike said that he expected FERC to put the City in a more active role relative to endangered species consultation. He said that the goal would be for endangered species consultation to be completed prior to the final license application, to avoid important T&E species issues and study requirements from coming up late in the game.

Ken asked about small mammal surveys. Mike said that the draft plan described some proposed trapping, and asked if the agencies had any guidelines. Ken said he didn't think there needed to be a very extensive program, but that FS could provide some guidance on traps and techniques. The group expressed a generally low need for small mammal surveys.

Richard asked about vegetation mapping, and Mike said that it would be done, as described later in the draft wildlife study plan. Dean said that the City would be doing aerial overflights of the whole area to improve upon the photographic base available. Mike encouraged the agencies to tell Dean of any specifics which they would require to assure that vegetation analysis could be done.

(The scale of the maps will be 1:9600 of the Blue Lake drainage and 1:800 of Sawmill Creek, with 50-foot contour intervals.)

Richard asked about vegetation analysis. Mike said he envisioned that the maps would be interpreted in terms of vegetation type and habitat or cover. He said that the question was how much of this interpretation would be required, given that the project would have little additional effect on wildlife after relicensing. Dean said he had spoken with at least one agency specialist and found that the film type and scale Dean described would be suitable for vegetation typing.

Mike said that the wildlife reports would be prepared by or under the review supervision of a qualified wildlife biologist, and that draft(s) would be made available for agency review prior to finalization. He said that there would be an annual meeting at which attendees would review the prior years' studies and make changes for future years, as necessary.

Water Resources.

Mike said that some of the topics in this area were fisheries related, including instream flow, but that the agency study requests had included instream flow in a major heading for hydrology. He said that all agencies had mentioned use of IFIM, among other methods, as a way of evaluating streamflow regimes.

He said that ADF&G comments on an earlier licensing action had been for more detailed methods to be used, and that the agency still wished to have such methods done.

Dean began by asking about the status of ADF&G instream flow recommendation for Sawmill Creek. Clayton said that ADF&G had used a "desktop" method for determining flow needs, and that he expected during relicensing for more detailed and refined methods to be used

Dean said that the flows in the earlier requests had been as much as 500 cubic feet per second (cfs) and that there was no way the City would be able to provide that much water with an economical project.

Mike said that all the agencies had mentioned use of Instream Flow Incremental Methodology (IFIM) to address instream flow needs for relicensing, but that only NMFS had specifically recommended it. There was some discussion involving Clayton, Christopher and Mike about what IFIM and one of it's components, PHABSIM was and what it might bring to the Blue Lake Project relicensing. They said it offered precision in

determining the amount of habitat available for a specific species and life stage of fish at a given flow. Dean asked if it would tell us how many fish might result, and Clayton and Larry said no, it was just for demonstrating habitat effects. Clayton said that the US Forest Service Region 10 Stream Habitat Evaluation Techniques would be helpful in describing the stream habitats prior to doing a PHABSIM study.

Christopher said he was on the call primarily to provide history into the background on water rights. He said that there was a lot of history, including the interactions whereby ADF&G had asked for water which became available, such as after the mill closure. He said that certain water uses had ceased, and that ADF&G had recommended that if that were to occur that surplus flow be converted to instream flow, but that ADF&G had not been granted any of the water. He asked if Dean could give a brief history of the existing water rights.

Dean then described the history of the water rights and Project operations going back to the original license. He said that in the late 1970s, as a result of several low water years and increasing load growth, the City had asked FERC for an amendment to the license. FERC amended the license to allow the minimum instream flow to be either 37 or 22 cfs during specified months, at times when the reservoir level dropped to or below a certain elevation. Dean said that this operation was referred to as the "rule curve", even though the project doesn't actually operate according to a rule curve the way many such projects do. Dean stressed that 1) this amendment was issued prior to the development of the Green Lake Project in 1982 and 2) because of the existence of the Green Lake Project, and since Dean had been operating the Blue Lake project (about 1995), the outflow of the fish valve hydro is normally set at 60 cfs and there has never been a time when it was set below 50 cfs. There had been no need based on low reservoir levels. Dean said that, with the storage afforded by the two projects, there had always been ways in which streamflows less than 50 cfs could be avoided.

Dean added that, on a normal year, there was about 130,000 MWH equivalent of combined reservoir inflow available, and about 100,000 MWH of demand, indicating a sizable excess of water. He said that, in such years, most of that excess water was spilled during the fall and early winter to make room for runoff water the next spring. He added, however, that, during dry years ("firm" water year), there might be only about a 90,000 MWH equivalent of inflow to meet the 100,000 MWH of demand, and that shortfalls could occur.

Dean described the energy production of the various powerhouses. He said that the small hydro additions produced about half the energy of the main powerhouse per amount of water, due primarily to less head.

Mike suggested that the overall topic of water use and allocation be addressed at a separate meeting to be held in June or July. Christopher said he welcomed the meeting, and that schedules would be clearer after a few more weeks. It was decided that a meeting would be scheduled after word from ADF&G regarding suitable times.

Mike added that he and Dean had discussed the possibility of using a joint Blue Lake-Green Lake-Sawmill Creek reservoir operations and streamflow model to help optimize development of the proposed streamflow regime. Dean said the City had access to such a model and was intending to use it during relicensing to develop the City's proposal for relicensing. Christopher said he would welcome such a process, as did John Dunker.

John said that a portion of the mill allocation was not transferred to the city because the mill had not used the full allocation immediately prior to shutting down. John passed out a summary spreadsheet of the various water rights in Blue Lake basin (Attachment II). Also attached is a "plumbing" diagram of the Blue Lake allocations which Dean passed out during the discussion (Attachment III). John pointed out that the ADF&G Instream Flow Reservation application noted on the chart had not yet been adjudicated and was still in "application pending" status.

Dean said that the rule curve should be adjusted on relicensing because it's not currently applicable, given the increased storage and generation capacity provided by the Green Lake Project. But, an adjusted rule curve must provide flexibility to draft either reservoir to perform maintenance on the dams and intake structures.

John added that the reservoir elevation limitations in the water rights and the ACMP Consistency were not identical to the reservoir elevations in the 1970 "rule curve" that Dean had described.

Joe asked about some instream flow data which was collected in 1989. Dean said he thought that it had been done by R.W. Beck, ADF&G and FWS as part of the early phases of the small hydro amendment. He added that the data were available at the City.

Christopher suggested that the City contact Kevin Kleweno, who along with Christopher and Gary Prokosch of Alaska DNR were heading up the new state committee (the "RCA") responsible for licensing hydro projects under the new state law. Mike said he would give Kevin a call.

Fisheries

Mike said that, as for wildlife, there would be a literature review, and again asked agencies for any data sources they might have.

The first topic in the study plan was Index Counts. Mike said that two changes were proposed in the Index Counts: 1) observations at the tailrace and 2) observations at tidewater.

Kevin asked if fish were visible at the tailrace. Karl said that viewing was difficult, but was possible in certain areas, as he drew on the board. A suggestion was made that snorkeling might be effective to see steelhead in the tailrace. Bob said he had experience in such observations. It was decided that Bob and Karl would discuss the possibility of adding some snorkeling in the tailrace to "calibrate" observations from the bank Clayton

suggested that radio tags were often used in projects in the lower 48 to determine fish movement near tailraces. He added that he had seen fish parts emanating from the draft tubes, from fish which had gone into the turbines when they were shut down and were chopped up when they were restarted. Dean said that, because the draft tubes were vertical and operated under a "vacuum", there was no possibility that fish could access the turbines.

Mike said that there was a suggestion to add an Index Survey station at tidewater to better enumerate pink salmon. Bob said it would also be good to coordinate the tidewater counts with ADF&G Comm Fish aerial surveys. Karl said he had asked the Industrial Park owners, and they had said he could access the area, and that he had good sight lines from the access points. It was generally agreed that Karl should start observing down to tidewater.

There was some discussion of viewing ability in Sawmill Creek for steelhead. Karl said that, when the dam wasn't spilling, visibility was often excellent. He said that redds were very visible last year because of the good buildup of algae, and lighter color where it had been disturbed. He said viewing was poorer during spill conditions because of high water and turbulence.

He mentioned differences in condition factor of rainbow trout within the reaches downstream of the falls. Mike asked if it would be possible to weigh and measure some fish to better quantify conditions factor differences. Karl said yes.

There was some discussion of minnow trapping. Karl said he had trapped extensively last year, with good success. It was decided that he would try to place minnow and other traps in the plunge pool this year. Karl said there were problems keeping traps in that area because of vandalism, but that he would try.

Mike said that the study plan proposed doing the USFS Region 10 Habitat evaluation program at Tier 1. Clayton and Ken said that the survey should be done at Tier 3, which didn't require a lot of additional work. Clayton said that the survey only needed to be done once, and that it didn't represent a lot of work. Mike asked if USFS could provide some guidance in the early work, and Ken said yes, that there were USFS people who had experience with the field work and could help. A separate plan will be submitted, including a proposal for which tier to choose.

Larry and Kevin asked about the need for fish food habits analysis. Mike asked if there was a need, and attendees generally said no. He said that it would be taken out of the plan.

The subject then turned to the Blue Lake spawning surveys. Mike described the current surveys, done according to plans developed last fall, which called for emplacement of thermographs in several Blue Lake tributary streams. Dean said he had put in several thermographs last year, and had been up last week to check to see that they were still in the water.

Mike asked John if fish might be spawning in the tribs, and John said yes, they are probably going up the streams now. He said that, in his studies, it had been difficult to see fish in Blue Lake Creek, but that it was easier to see them in the stream north of there (Dean later identified that stream as "Becky Creek").

Mike asked about the other part of the spawning plan, which was direct observations. Larry said that, in his experience, the fish often held off the alluvial fans of tributary streams until nightfall, when they ascended the stream and spawned in just a few hours. He said it might be very difficult to actually see fish spawning. Dean added that, during the study planning conference call last fall, other researchers had said that it was difficult to see fish actually spawning.

There was some discussion of the migration "barrier" at the mouth of Blue Lake Creek which John and Bob had both seen during John's studies. Dean said he was not aware of this barrier. It was thought that this barrier might be at a much lower elevation that the current lake elevation, or that it might have been washed out.

After some discussion of how the City might document spawning time, it was decided that we would observe the tributaries at least twice this spring, as proposed in the 2002 plan, and decide, after reviewing the results, what to do next year.

Next came the topic of fish population estimates. Mike said that it might be to the City's benefit to do population estimates because the data could be used to document overall fish species occurrence, distribution and abundance, required in the relicensing NEPA documents.

Roger said that he and Mike had discussed doing various population estimation techniques, all of which relied on mark-recapture experiments based on hoop net captures. Roger put a chart on the board demonstrating which population parameters could be obtained depending on how many mark-recapture events were used over a period of years. He said that a Jolly-Seber estimation was the most complete because it provided estimates of mortality and recruitment after a certain time period.

There was considerable discussion about the details of doing Peterson, Schnabel and Jolly-Seber estimates. Roger said that we would probably have to catch about 50 fish per day to get enough data. John said that the Jolly-Seber for Blue Lake which he had done hadn't worked, and that they wound up doing a Schnabel. He said the Jolly-Seber was very data hungry, and if you didn't get the proper number of fish, it didn't work.

Mike asked if ADF&G could provide nets and other equipment. Bob said he would check, but thought he could help to some degree. Mike asked if there were ways in which we could cut back on the amount of time and effort required. He said that, as described on the board, the data for a Jolly-Seber would represent the single greatest study expenditure for the project, and wondered if the information would be that valuable with respect to relicensing.

Roger said that there were ways to cut back and that we could discuss them. Bob said he would help with equipment, but not if we were going to do a very limited study (if it means statistical confidence is compromised).

The subject then turned to entrainment surveys. Mike said that the proposal for entrainment documentation included scuba diving observations, fish trapping and hydroacoustics. Dean said that the intake was at a minimum more than 70 feet below the water surface, and usually more than 100 feet. He said he didn't see how fish would be swimming at that depth. He said he could scuba dive to the intake to help place a net. There was some discussion of whether a fish trap would be effective in the intake area, but it was generally agreed that it wouldn't be a bad idea to place one there as part of the overall fish trapping array. Dean described the trash rack and said that it wasn't very exclusive.

There was some discussion of hydroacoustic methods. Bob and Larry mentioned a type of fish finder which should be usable to document fish presence or absence at the face of the intake. It was generally agreed that there should be some continuous documentation of fish presence or absence, because just because a net didn't catch anything didn't necessarily mean there were no fish in the area.

This concluded the discussion of the fish and wildlife plans. Before the meeting broke up, there was a question about temperature measurement. Mike mentioned that he had been told by DEC staff that, because of staffing limitations and policy decisions, DEC would not be able to participate in relicensing consultation until after the license application is submitted.

Dean said he would be buying more temperature data recorders, and wanted to know where to place them. He put a sketch on the board and showed the locations of the thermographs which would document water temperatures at the best places in sawmill creek.

The meeting adjourned at about 3:45.

ATTACHMENT I

Documentation of comment incorporation for minutes of April 24 study planning meeting, Blue Lake Project, FERC No. 2230.

ADF&G Comments (Comments via edited copy of electronic file, from K. Brownlee to D. Orbison and mailing list, May 13, 2003)

Comment Number	Comment	Response
ADFG1	Question of whether the aerial photo would be 20 or 50-foot contours	Text indicates 50-foot contours. P. 4, 1st Para. (20-foot contours described in meeting were in error.)
ADFG2	Add "among other methods" after IFIM and before "as a way"	P. 4, 1st Para. Comment language inserted verbatim.
ADFG3	Surplus flow from mill closure was recommended to be converted to instream use.	P. 4, 1st Para. Text changed to add ADFG comment language verbatim.
ADFG4	Add, in parens, "firm water years" after words "in dry years"	P. 5, 2nd full Para. Comment language inserted verbatim.
ADFG5	Insert Period	P. 6, 2nd full Para. Inserted.
ADFG6	Add words "for steelhead"	P. 6, 2nd from last Para. Comment language inserted verbatim
ADFG7	Various word changes on P. 7, various topics.	P. 7, 1st, 2nd, 3rd, full Paras. Comment language inserted verbatim in all cases.
ADFG8	Minor word change	P. 8, 3rd Para. Word change inserted verbatim
ADFG9	Add words relating to statistical confidence	P. 9, 1st Para. Comment language inserted verbatim
ADFG10	Add comment on ADEC staff limitations and consultation. (Topic was actually brought up by Mike)	P. 9, 2nd Para. Comment language inserted verbatim, but attributed to Mike, not Dean.

ATTACHMENT I (cont.)

Documentation of comment incorporation for minutes of April 24 study planning meeting, Blue Lake Project, FERC No. 2230.

USFS Comments (Comments via phone from K. Coffin to M. Prewitt, June 18, 2003)

Comment Number	Comment	Response
USFS 1	Need to state that City is responsible for literature review and agencies should contribute information	P. 1, Wildlife Section, 2nd Para. Language added to show City's responsibility.
USFS 2	Indicate that the Wildlife Report will be written by a wildlife biologist	P. 4, 2nd full Para. Language changed to show reports will be prepared by or under the review supervision of a wildlife biologist.
USFS 3	Regarding Blue Lake rainbow trout spawning observations, question on the number of observations.	No change made. P. 8, 3rd full Para. states researchers will "observe the tributaries **at least** twice this spring, as proposed in the 2002 plan, and decide, after reviewing the results, what to do next year".

ADNR Comments (Comments via e-mail from John Dunker to M. Prewitt, May 13, 2003)

Comment Number	Comment	Response
ADNR 1	State that Dean said the small hydros produce about half the energy of the main plant	P. 5. 4th Para. Language added to state "small hydro additions produced about half the energy of the main powerhouse per amount of water, due primarily to less head."
ADNR 2	Request to add that ADFG's instream flow reservation application was in	P. 6, 1st full Para. Language added to state "John pointed out that the ADF&G

	application pending status.	Instream Flow Reservation application noted on the chart had not yet been adjudicated and was still in 'application pending' status".
ADNR 3	Request regarding language to distinguish differences between ACMP and other reservoir elevation limitations.	P. 6, 3rd full Para. Language added stating "John added that the reservoir elevation limitations in the water rights and the ACMP Consistency were not identical to the reservoir elevations in the 1970 'rule curve' that Dean had described".

ATTACHMENT II
Water Rights Allocations, Blue Lake Basin (From John Dunker, ADNR)

(See Next Two Pages)

Blue L. watershed water allocations

ADL LAS	File #	Name	Use	Priority date	Point of Diversion	Point of Use	Point of Return	WR amount	cfs equiv	MGD equiv	AF/yr equiv	Max. rate diversion	WR Status	Notes
ADL	51543	City & Bor. Sitka	hydro	01/02/1958	Blue L. intake	power house	Sawmill Cr.	191.4 MGD	296	191.4	214,343		Certificate	3
"	"	"	public water supply	"	"	public system	n/a	8.6 MGD	13.3	8.6	9,631		"	
ADL	43826	City & Bor. Sitka	public industrial water supply	10/09/1959	Blue L. intake	industrial site	n/a	34,722.5 AF/yr	48	31	34,723	31 MGD	Certificate	3, 5
LAS	19669	City & Bor. Sitka	bulk export	10/09/1959	Blue L. intake	tanker moor.	n/a	14,000AF/yr	19.4	12.5	14,000	33.6 MGD	Certificate	3, 4, 5
"	"	"	hydro	"	"	power house	Sawmill Cr.	1,000 AF/yr	1.4	0.9	1,000	"	"	3, 4
LAS	11995	ADF&G	instream flow for fish habitat	07/14/1988	n/a	[See note 1]	n/a	[See note 2]					IFR Apln.	1, 2
LAS	13236	City & Bor. Sitka	hydro	02/15/1991	Blue L. intake	fish valve unit	Sawmill Cr.	36,190 AF/yr.	50	32.3	36,190	50 cfs	Permit	
LAS	13237	City & Bor. Sitka	hydro	02/15/1991	Blue L. intake	mill valve unit	mill filter plant	56,000 AF/yr.	77.4	50	56,000	50 MGD	Permit	
LAS	20526	ADNR	46.15.035 reservation for fis	07/01/1992	n/a	Sawmill Cr.	n/a	[See note 3]					Cert. of Res.	3
"	"	"	"	"	"	Blue L.	n/a	[See note 4]					"	4

See Notes, next page

Notes

Blue L. watershed water allocations

Note 1, LAS 11995: Instream use in stream reach of Sawmill Creek between its mouth and the mouth of Beaver Creek at approx. RM 1.83.

Note 2, LAS 11995: Reservation applied for by month:

Jan	121 cfs	121	78.2	87,447
Feb	98 cfs	98	63.3	70,825
Mar	95 cfs	95	61.4	68,657
Apr	147 cfs	147	95	106,237
May - Oct	477 cfs	477	308.3	344,728
Nov	331 cfs	331	213.9	239,214
Dec	152 cfs	152	98.2	109,850

Note 3: Subject to Sawmill Creek instream flow requirements as follows:
[also established by .035 Reservation LAS 20526]
("Adverse" applies when reservoir level conditions are below the Rule Curve.)

	Normal	Adverse
Jan-Apr	50 cfs	22 cfs
May-Nov	50 cfs	50 cfs
Dec	50 cfs	37 cfs

Note 4: Subject to Blue Lake Reservoir elevations as follows:

[also established by .035 Reservation LAS 20526]

Months	Beginning of month elevations, feet MSL
March	285
April	255
May	252
June	265
July	294
Aug. - Feb.	295

Note 5: Authorizations for removal from the hydrologic unit pursuant to AS 46.15.035:

ADL 43826: 13.6 MGD (21 cfs)
LAS 19669: 14,000 AF/yr; max. diversion rate 33.6 MGD or 52 cfs

DNR
Water Resources Section

For information only -
not an official water rights record.

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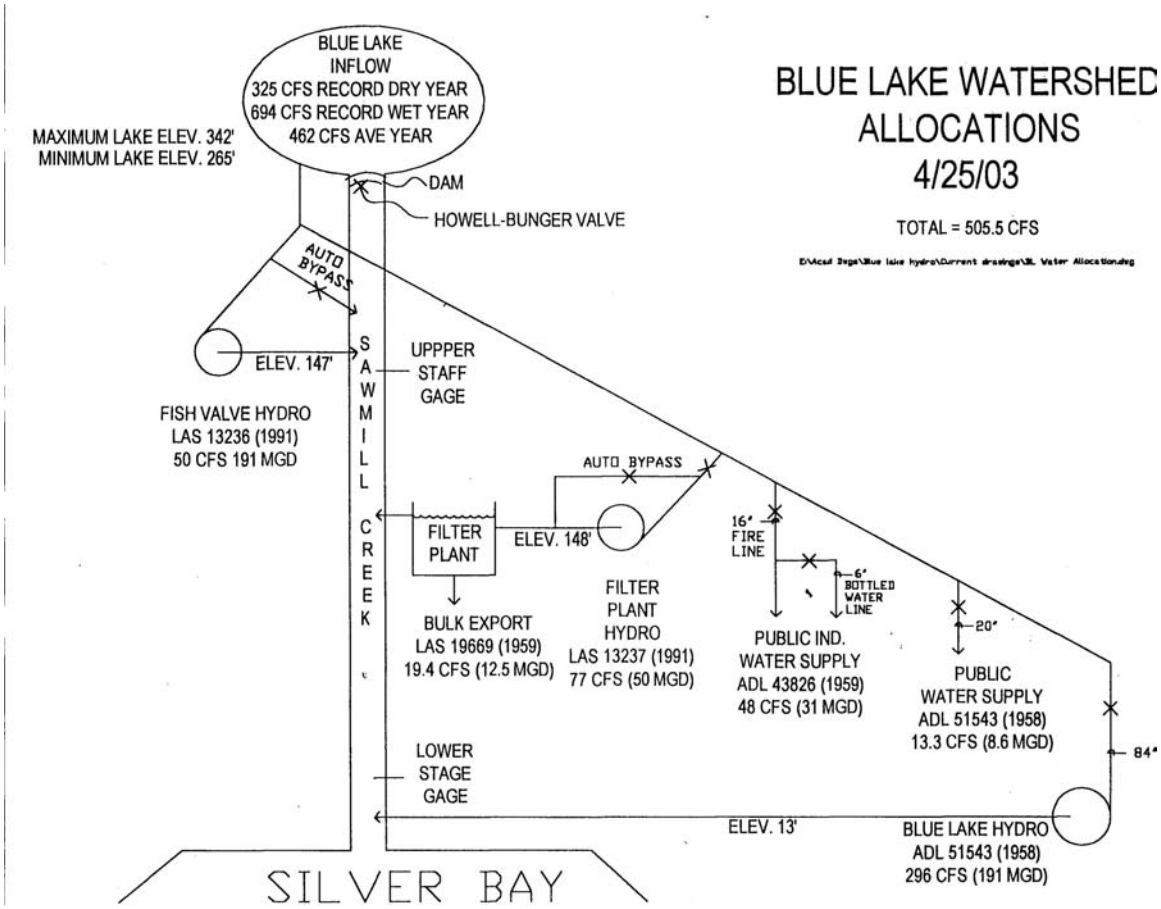
Please bring any errors or omissions to the attention of John Dunke

ATTACHMENT III

"Plumbing" diagram of Blue Lake water (Source: Sitka Electric Department)