IGWA’S FOURTH MITIGATION PLAN
60% MAGIC SPRINGS PROJECT REPORT

Prepared for

THE IDAHO GROUND WATER APPROPRIATORS, INC.
NORTH SNAKE GROUND WATER DISTRICT
MAGIC VALLEY GROUND WATER DISTRICT
SOUTHWEST IRRIGATION DISTRICT

Prepared by

SPF Water Engineering, LLC
300 East Mallard Drive, Suite 350
Boise, Idaho 83706
(208) 383-4140

September 26, 2014
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1. Magic Springs Project Summary

The Idaho Ground Water Appropriators, Inc. (IGWA) is reviewing legal and technical options related to water management stemming from the Rangen, Inc. (Rangen) Water Call. IGWA has requested through its water rights legal counsel that SPF Water Engineering, LLC (SPF) provide a 60% design to deliver 9.1 cfs of direct flow to Rangen from the Magic Springs facility owned and operated by SeaPac of Idaho, Inc. (SeaPac).

SPF was hired to design the infrastructure required to implement IGWA’s Fourth Mitigation Plan, which includes the direct delivery of water from Magic Springs to Rangen, referred to as the Magic Springs Project (Project). The Project proposes construction of a pumping station and pipeline from SeaPac’s Magic Springs property to the Rangen property approximately 1.6 to 1.9 miles away, depending upon the final diversion point. To date, the engineering required to construct the Project is 60% complete. Current engineering drawings are included as Appendix A. This report summarizes the work SPF has completed regarding the Project.

2. Water Rights

SeaPac owns two water rights for fish propagation at Magic Springs. Water right 36-7072 authorizes the diversion of 148.2 cfs for fish propagation purposes from Thousand Springs with a priority date of September 5, 1969. Water right 36-8356 authorizes the diversion of 45.0 cfs for fish propagation from springs with a priority date of May 9, 1988. Rights 36-7072 and 36-8356 combined shall not exceed a total diversion rate of 148.2 cfs. Water right information is summarized in Table 1. The Project will be designed to deliver a maximum flow of 10.0 cfs of spring water associated with water right 36-7072 to Rangen.

The points of diversion associated with water rights 36-7072 and 36-8356 are displayed in Figure 1. These locations were obtained from Idaho Department of Water Resources’ (IDWR) water rights records and may not reflect the actual diversion location.

IGWA submitted an Application for Transfer of Water Right on September 10, 2014, to IDWR to add Rangen as a new place of use for up to 10 cfs from water right 36-7072. Approval of this transfer will allow water from Magic Springs to be used for fish propagation and mitigation at Rangen. A copy of the transfer application is included as Appendix B, less some of the attachments. The Project will utilize one of the three authorized points of diversion for water right 36-7072.

A letter of intent (LOI) established between IGWA and SeaPac states that SeaPac will lease or sell up to 10 cfs of “first use” water from its Magic Springs water rights (36-7072 and 36-8356) to IGWA. The LOI is included as Attachment 1b within the Application for Transfer of Water Right included as Appendix B.
<table>
<thead>
<tr>
<th>Water Right</th>
<th>Priority Date</th>
<th>Diversion Rate (cfs)</th>
<th>Use</th>
<th>Source</th>
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<td>9/5/1969</td>
<td>148.2</td>
<td>Fish Propagation</td>
<td>Thousand Springs</td>
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<tr>
<td>36-8356</td>
<td>5/9/1988</td>
<td>45</td>
<td>Fish Propagation</td>
<td>Springs</td>
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</table>

Table 1. Magic Springs Water Rights

Figure 1. Water Rights Points of Diversion
3. WATER QUALITY

SPF performed a limited water quality field analysis on September 9, 2014 at both Magic Springs and Rangen. This analysis focused on pH, electrical conductivity, specific conductance, and dissolved oxygen. The results are shown in Table 2. In general, the Magic Springs water had a pH and dissolved oxygen concentrations similar to that found at Rangen. The electrical conductivity and specific conductance had slightly (~5%) higher readings than the water at Rangen.

<table>
<thead>
<tr>
<th>Location</th>
<th>Date/Time</th>
<th>pH</th>
<th>EC (µS)</th>
<th>SC (µS)</th>
<th>DO (mg/L)</th>
<th>% Saturation</th>
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Table 2. Water Quality Field Data

SPF also took temperature readings on September 9, 2014. Three different instruments were calibrated with a mercury thermometer and a correction factor by dividing the thermometer reading by the instrument reading. Field measurements of temperature and the corrected temperatures are shown in Table 3. The temperature readings at Magic Springs were very similar to the readings at Rangen.

<table>
<thead>
<tr>
<th>Location</th>
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<th>Temp (°C)</th>
<th>Corr Temp (°C)</th>
<th>Temp (°C)</th>
<th>Corr Temp (°C)</th>
<th>Temp (°C)</th>
<th>Corr Temp (°C)</th>
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<td>15.6</td>
<td>15.6</td>
<td>15.8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3. Temperature Readings

An analysis to determine how much the water temperature may increase after 10 cubic feet per second (cfs) is pumped and piped from Magic Springs to Rangen is being performed by Emily LoDolce, P.E. (AMEC). This temperature analysis will address the two proposed diversion locations. The analysis was not completed when this report was published and will be made available when it is completed.
SPF does not see any critical water quality or temperature disparities between the two facilities' water sources. SeaPac of Idaho is successfully raising trout at their Magic Springs facility. The Project assumes that water from Magic Springs will be suitable for raising trout at Rangen.

4. JANUARY 19, 2014 DELIVERY – 0.5 CFS

The Order Approving IGWA’s Second Mitigation Plan states IGWA must provide water to Rangen by January 19, 2015, the date when the Morris exchange water mitigation expires. If IGWA fails to satisfy this obligation, users of consumptive ground water rights junior to August 12, 1973 will be curtailed. To mitigate for commercial, industrial, and municipal groundwater users directly affected by the Order, IGWA proposes the delivery of 0.5 cfs of direct flow from Magic Springs to Rangen, prior to the January 19, 2015 deadline. Full build out of the permanent pump station and pipeline is not scheduled to occur prior to the January 19, 2015 deadline. Because of this, a temporary pump and pipeline system will need to be constructed to deliver the 0.5 cfs to Rangen.

4.1. Temporary Pumping Facilities

To deliver 0.5 cfs to Rangen, a temporary end-suction pump will be constructed to pull water directly from the upstream end of the I&J raceway at the Magic Springs facility. The pump will be designed with a manual priming pump and foot valve on the suction line. The pump will be sized for a TDH of 200 feet and a flow of 225 gpm (0.5 cfs) and will require a nominal 20-hp motor. Pump monitoring during the day will be completed by the general contractor selected for the pump installation. SeaPac staff who live on-site at the Magic Springs facility will be available during non-working hours for pump monitoring.

4.2. Temporary Piping Facilities

The proposed temporary pipeline alignment will parallel the permanent pipeline alignment. Six-inch, SDR 9 HDPE pipe will be placed on top of the ground from the pump to the top of the rim. The pipe will be hung from the rim and will be restrained across the talus slope with sand bags. Once on top of the rim, the pipe will transition to SDR 17 HDPE and will run on top of the ground north to the Mitchell Property. From the south end of the Mitchell property north to E 3000 S, existing pipe infrastructure owned by Butch Morris will be utilized. New pipe will be buried under E 3000 S. From the north side of the road to the Rangen property, SDR 17 HDPE pipe will be placed on top of the ground through dormant fields owned by Mr. Morris and Mr. Candy. The HDPE pipe will then follow the existing above grade piping up the talus slope and discharge into the existing Rangen Box. The described alignment is shown in Figure 2.

Mr. Morris has stated additional portions of his buried piping network have the potential to be used, resulting in a reduction of the amount of new above grade pipe re-
quired for the temporary pipeline project. Further investigation will be needed to confirm existing pipeline locations and materials. Along with additional existing buried infrastructure, the use of idle above ground 6-inch aluminum irrigation pipe will also be investigated and could be used in lieu of HDPE in many of the areas where new piping is required.

When full build out of the permanent pump station and pipeline has occurred and the permanent piping is successfully delivering water to Rangen, the temporary piping facilities will be removed.
Figure 2. 0.5 CFS Pipeline Alignment
5. PROJECT DESIGN – 10 CFS

5.1. Pipeline Alignment

IGWA has requested SPF design a 10-cfs pumping and pipeline system to reliably deliver 9.1 cfs from Magic Springs to the Rangen facility. The alignment shown in Figure 3 was developed based on topography, construction feasibility, Hagerman Highway District (HHD) input, and acquirable access to private property. Elevations for the alignments were developed by in-field topographical survey on both ends of the alignments by Quadrant Consulting, Inc. (Quadrant) and an aerial survey and mapping for the length of the alignments by 3Di GeoTerra Mapping Group.

Two potential points of diversion for the project exist below the rim at Magic Springs. The pipeline alignments for both diversion points eventually intersect on top of the rim within SeaPac property. From that point to Rangen, the alignment for both points of diversion is the same. The alignments range from 1.6 to 1.9 miles long.

From the Magic Springs points of diversion, the alignments travel from their respective pumping location above grade, across the talus slope, and up the canyon rim. Once on top of the rim, the pipeline transitions from above grade steel to buried HDPE and parallels the rim on SeaPac property until it intersects with North Side Canal Company (NSCC) property. Within NSCC property, the alignment crosses and then parallels the NSCC 7-D waste ditch until turning north on Lee Mitchell’s property. Once across the Mitchell property, the pipeline will travel down HHD’s S 1200 E right-of-way for approximately 450 feet to property owned by Butch Morris. The pipeline then parallels S 1200 E on Morris property, crosses E 3000 S, and continues north across Morris property. The pipeline crosses a short section of Walter Candy property prior to entering property owned by Rangen.

5.1.1. Highway District Approval

SPF has presented two different alignments to the HHD superintendent, Rich Regnier. SPF requested that HHD grant preliminary approval for both alignments. The preferred alignment, described above, runs within HHD’s S 1200 E right-of-way for approximately 450 feet and has one road crossing at E 3000 S. The alternate alignment, as shown in Figure 3, includes an additional two road crossings of S 1200 E. The HHD is holding a meeting on September 26, 2014 to discuss the two alignments and to consider approval. This report was published prior to HHD’s meeting, so it has been assumed both alternatives will be approved. If the IDWR approves the Fourth Mitigation Plan and the Project moves forward, the pipeline contractor will be required to obtain permits from the HHD for the selected alignment and pay any associated fees required at the time of construction.
Figure 3. Pipeline Alignment
5.2. ABC Flume Diversion

5.2.1. Diversion Description

There are two potential diversion locations at Magic Springs for delivery of up to 10 cfs of water to Rangen. One location is referred to as the ABC flume diversion. The other location is referred to as the I&J raceway diversion, which is discussed in Section 5.3. The ABC flume diversion will connect to an existing concrete flume that carries ABC spring water to raceways. The water surface elevation at this location is approximately 3,020 feet, 37 feet higher than the I&J raceway diversion. This diversion location is an existing point of diversion under SeaPac’s water right 36-7072. According to IDWR records, the ABC flume typically carries 21 cfs in the summer and 24 cfs in the winter and has a defined seasonal variation. A photograph of the proposed diversion location is provided as Photo 1. The proposed diversion location is shown in Figure 4.

The proposed diversion point from the ABC flume is a short distance from where the water emanates from the talus slope. Therefore water diverted at this location should have water quality representative of the spring at its source. Because the proposed diversion is connecting to an existing concrete flume in an area with no wetland vegetation, a new spring collection structure and associated permitting is not required.

The LOI, between IGWA and SeaPac, states that SeaPac will grant a permanent easement to IGWA to access, design, construct, operate and maintain the water intake and collection facilities, pump station, pipeline, and other facilities as necessary to divert and deliver the 10 cfs to Rangen.

Photo 1. ABC flume diversion location
Figure 4. Potential diversion locations at Magic Springs
5.2.2. Gravity Pipeline

A 24-inch diameter gravity pipeline, constructed of welded steel pipe, will carry water from the flume to the pump station. This pipeline will be installed above-grade, and will connect to the flume via a new concrete collection box. The gravity pipeline will be approximately 120 feet long. A head gate will be installed on the upstream end of the gravity line to isolate the feed to the pump station for maintenance. The pipeline and diversion structure details can be found in the design drawings included as Appendix A.

The water surface elevation at the flume is 3,020 feet and can be further increased through the use of downstream check boards if necessary. Accounting for head loss through the pipeline, the calculated head at the suction side of the pump station is 3,016 feet.

5.2.3. Pump Station Design

The 60% design set contemplates utilizing a skid-mounted packaged pump station; including pumps, mechanical piping, valves, flow meter, variable frequency drives (VFDs), and associated controls, generator, and enclosure. The pump station is proposed north of the Magic Springs office as indicated on the design drawings, at a ground elevation of approximately 2,994 feet. The proposed location avoids Magic Springs infrastructure and will not interfere with operations.

The pump station will include three short-set line-shaft turbine pumps. Two of the pumps will be duty pumps and one will be on standby to ensure that two pumps can operate at all times should one be taken out of service for maintenance. The pumps will be placed in individual 24-inch diameter pump cans. The depth of the cans is anticipated to be approximately 7 feet below existing ground surface. The pump cans will be fed from the 24-inch diameter gravity line from the ABC flume. The pump cans will be designed to be watertight under static pressure conditions from the flume.

To deliver 10 cfs from the ABC flume to Rangen, the pump station will need to generate approximately 200 feet of total dynamic head (TDH). The TDH calculation assumes:

- 480 feet (120 feet for the gravity line and 360 feet for the pressure line) of 24-inch Schedule 20 steel pipe (23.25-inch I.D.)
- 9,440 feet of 24-inch HDPE pipe (IPS, SDR 17, 21.01-inch I.D.)
- A pumping water elevation of 3,016 feet at the pump station
- A maximum pipeline elevation of 3,165 feet
- A butterfly valve throttled to maintain backpressure of approximately 25 feet over the maximum elevation of the pipeline
- Connection to Rangen’s existing 14-inch buried steel pipe between the hatch house and the small raceway
  - Assumed design flow of 4 cfs (1,800 gpm) to Rangen’s small raceway
Assumed design flow of 6 cfs (2,700 gpm) to the Rangen box

With a TDH of 200 feet and a delivery rate of 10 cfs (4,488 gpm), total brake horsepower (hp) required is 268 hp, or 134 hp per pump with two pumps running. The pumps will require nominal 150-hp motors. All three 150-hp pumps will be controlled by VFDs and paced off flow to maintain any operator-adjustable flow rate up to 10 cfs. System operation will be controlled by a programmable logic controller with remote monitoring and auto-restart capabilities.

The packaged pump station will include an isolation and check valve on each pump, a mainline butterfly valve, pressure relief, combination air valve, and a flow meter. A generator is proposed to provide emergency power. The pump station will be enclosed for protection from weather and to provide sound attenuation. The insulated enclosure will be heated and ventilated.

The pump station will be designed to deliver a maximum flow of 10 cfs at 200 feet of TDH. Because the pump station is using two VFD-controlled pumps paced off of flow, it can be programmed to deliver the phased in lower direct flows identified by IDWR in the Rangen curtailment order. These flows were determined to be:

- 1st Year: 3.4 cfs (1,525 gpm)
- 2nd Year: 5.2 cfs (2,335 gpm)
- 3rd Year: 6.0 cfs (2,695 gpm)
- 4th Year: 6.6 cfs (2,965 gpm)
- 5th Year: 9.1 cfs (4,085 gpm)

The pump station will be designed to be a reliable, year-round facility. It includes a redundant pump, remote monitoring and alarming capabilities, auto-restart, and a proposed standby power generator and auto-transfer switch. The pump station VFDs will be controlled by discharge rate, allowing them to automatically adjust their speed to deliver a constant flow to Rangen without the need for manual adjustments. The pump station enclosure will be lockable and durable. All these items will make the pump station dependable, biologically and physically secure, and will minimize downtime due to maintenance and power outages.

5.2.4. Power Availability

Three-phase power is available at Magic Springs to power the ABC pump station. Idaho Power has confirmed they can supply the pump station with the necessary electrical service. At this time, there are no known issues related to power availability that will prevent the pump station from operating and delivering 10 cfs to Rangen.

5.2.5. Pipeline Design

With the ABC flume diversion location, the pipeline to Rangen is approximately 1.9 miles long. The 60% design anticipates using approximately 120 feet of welded steel
pipe for the gravity line from the flume to the pump station and 360 feet of welded steel pipe (Schedule 20) to reach the top of the rim, installed above-grade. Once on top of the rim, the pipeline will consist of approximately 9,440 feet of HDPE pipe, SDR 17 (125 psi). HDPE is a very durable and low-friction pipe. It has a better friction coefficient than PVC, which minimizes head loss due to friction and is less susceptible to any build-up on the interior surface of the pipe.

The working pressure at the pump station is anticipated to be approximately 95 psi. The Schedule 20 steel pipe specified in the 60% design documents downstream of the pump station has a pressure rating exceeding 500 psi. The specified pipe is designed to accommodate the pressure surges, or water hammer, that may occur due to pressure transients in the system resulting from power outages or rapid valve closures.

The HDPE pipe will be connected using a butt-fusion welding machine. The pipe comes in 50-foot lengths which will result in approximately 200 butt-fused joints. The interior welds will be de-beaded to keep the interior a continuous smooth surface. This type of HDPE installation results in a fully restrained and leak-free pipeline. The pipeline has an approximate 60-foot bending radius, which eliminates the need for fittings on vertical and horizontal bends of 45 degrees or less.

A minimum of 3 feet of cover is required for the pipeline installation. In many places the bury depth is greater than this to maintain straight grades in the pipe. The grading of the pipe is necessary to minimize the number of high points and low points in the alignment. Over the 1.9 miles, the design has limited the high points and low points to approximately seven each. Combination air valves will be installed at the high points and pipeline drains will be installed at the low points. Additional combination air valves may be installed along the alignment in the final design. Combination air valves will release air during pipeline filling, let air enter the pipe when it is being drained, and release small amounts of accumulated air when the pipe is under pressure. These valves help protect the pipe during filling and draining events and minimize the amount of air in the line, which reduces the friction losses in the pipeline. In areas that are safe from vehicles or farm equipment, the air valves are placed directly over the pipe with access via a manhole. Where the pipeline is in a road or a farmed field, the air valve is remotely located in a vault and fed with a small diameter lateral line.

5.3. I&J Raceway Diversion

5.3.1. Diversion Description

The other potential diversion location at Magic Springs for delivery of up to 10 cfs of water to Rangen is referred to as the I&J raceway diversion. The I&J raceway diversion will divert water from the manifold at the head of the I&J raceway, eliminating the need to construct new spring collection infrastructure. As a result, permitting associated with potential impacts to wetlands and wildlife is avoided. The water surface elevation at this diversion point is approximately 2,983 feet. This diversion location is an
existing point of diversion under SeaPac’s water right 36-7072. The I&J raceway flows approximately 34 cfs according to SeaPac. A photograph of the proposed diversion location is provided as Photo 2. The proposed diversion location is shown in Figure 4.

The proposed diversion point from the I&J raceway is directly adjacent to the spring water source pond and is prior to any commercial use within the raceway. The water diverted at this location should have water quality representative of the spring at its source.

The LOI, between IGWA and SeaPac, states that SeaPac will grant a permanent easement to IGWA to access, design, construct, operate and maintain the water intake and collection facilities, pump station, pipeline, and other facilities as necessary to divert and deliver the 10 cfs to Rangen.

![Photo 2. I&J raceway diversion location](image)

5.3.2. Gravity Pipeline

A 24-inch diameter buried gravity pipeline, constructed of ductile iron pipe, will carry water from the I&J raceway to the pump station. The gravity pipeline will be approximately 45 feet long. A head gate will be installed on the upstream end of the gravity line to isolate the feed to the pump station for maintenance. The pipeline and diversion structure details can be found in the design drawings included as Appendix A.

The water surface elevation at the raceway is at 2,983 feet. Accounting for head loss through the pipeline, the calculated head at the pump station is 2,982 feet.
5.3.3. Pump Station Design

The pump station design for the I&J raceway diversion is similar to that for the ABC flume diversion. A skid-mounted packaged pump station is anticipated including pumps, mechanical piping, valves, flow meter, variable frequency drives (VFDs), and associated controls, generator, and enclosure. The pump station is proposed north of the I&J raceway as shown on the design drawings, at a ground elevation of approximately 2,986 feet. The proposed location avoids Magic Springs infrastructure and will not interfere with operations.

The pump station will include three short-set line-shaft turbine pumps: two duty pumps and one standby. The pumps will be placed in individual 24-inch diameter pump cans. The depth of the cans is anticipated to be about 12 feet below existing ground surface. The pump cans would be fed from the 24-inch diameter gravity line from the I&J raceway.

To deliver 10 cfs from the I&J raceway to Rangen, the pump station will have to generate approximately 220 feet of total dynamic head (TDH). The TDH calculation assumes:

- 365 feet of 24-inch Schedule 20 steel pipe (23.25-inch I.D.)
- 7,980 feet of 24-inch HDPE pipe (IPS, SDR 17, 21.01-inch I.D.)
- A pumping water elevation of 2,982 feet at the pump station
- A maximum pipeline elevation of 3,149 feet
- A butterfly valve throttled to maintain backpressure of approximately 25 feet over the maximum elevation of the pipeline
- Connection to Rangen’s existing 14-inch buried steel pipe between the hatch house and the small raceway
  - Assumed design flow of 4 cfs (1,800 gpm) to Rangen’s small raceway
  - Assumed design flow of 6 cfs (2,700 gpm) to the Rangen box

With a TDH of 220 feet and a delivery rate of 10 cfs (4,488 gpm), total brake horsepower (hp) required is 295 hp, or 148 hp per pump with two pumps running. The pumps will require nominal 200-hp motors, with all three controlled by VFDs and paced off flow to maintain any operator-adjustable flow rate up to 10 cfs. System operation will be controlled by a programmable logic controller with remote monitoring and auto-restart capabilities. Other features of the packaged pump station are similar to the ABC flume pump station. The pump station will be designed to be a reliable and secure facility. It includes a redundant pump, remote monitoring and alarming capabilities, auto-restart, and a proposed standby power generator and auto-transfer switch.

5.3.4. Power Availability

Three-phase power is available at Magic Springs to power the I&J pump station. Idaho Power has confirmed they can supply the pump station with the necessary electri-
cial service. At this time, there are no known issues related to power availability that will prevent the pump station from operating and delivering 10 cfs to Rangen.

5.3.5. Pipeline Design

With the I&J raceway diversion location, the pipeline to Rangen is approximately 1.6 miles long. The pipeline will include approximately 365 feet of above-grade steel pipe (Schedule 20) to reach the top of the rim, and then approximately 7,980 feet of HDPE pipe, SDR 17 (125 psi) to Rangen. The HDPE pipe will be connected using a butt-fusion welding machine, with the interior welds de-beaded to keep the interior a continuous smooth surface. This type of HDPE installation results in a fully restrained and leak-free pipeline.

The working pressure at the pump station is anticipated to be approximately 93 psi. The Schedule 20 steel pipe specified in the 60% design documents downstream of the pump station has a pressure rating exceeding 500 psi. The specified pipe is designed to accommodate the pressure surges, or water hammer, that may occur due to pressure transients in the system resulting from power outages or rapid valve closures.

A minimum of 3 feet of cover will be provided for the pipe. Over the 1.6 miles, the design has limited the high points and low points to approximately 5 each. Combination air valves will be installed at the high points and pipeline drains will be installed at the low points.

5.4. Delivery to Rangen

The pipeline from Magic Springs will connect to the existing 14-inch pipeline between the hatch house and the small raceway. Redundant butterfly valves will be provided immediately upstream of the tie-in point to maintain a minimum upstream pressure in the pipeline under all static and operating conditions. Throttling the butterfly valve will ensure a full pipeline upstream of the valve and that enough pumping head is developed to transport water over the mainline high-point without creating a vacuum condition. Only one of the throttling valves will be utilized at a time, with the other valve closed. Should the active valve need to be replaced, the other valve could be used to maintain delivery of water to Rangen. Isolation valves will be installed on either side of each of the butterfly valves to allow for maintenance and/or replacement. The butterfly valves will be housed in a buried vault on Rangen property.

Directly downstream of the valve vault, the new pipeline will connect by tee to the existing 14-inch buried steel pipeline that exists between the hatch house and the small raceway. A 14-inch butterfly valve will be installed on the small raceway leg of the tee to allow control of flow to the small raceway. There is an existing 14-inch valve located in a vault near the hatch house that could be used to control flow from or to the Rangen Box. In addition, there is an existing valve and lateral that can be used to direct flow from the 14-inch pipeline to the hatch house.
The existing 14-inch pipeline transports water from the Rangen Box to the small raceways. The pipe from Magic Springs will tie-in to this 14-inch pipe, allowing flows to be directly delivered to the small raceways through the 14-inch pipe, or to the large raceways in two ways: (1) after water flows through the small raceways via an existing 18-inch diameter pipeline and (2) through the Bridge Diversion in Billingsley Creek which can receive water spilled from the Rangen Box. The 60% design assumes 4 cfs will be delivered to the small raceways and 6 cfs will be delivered to the Rangen Box. However, if the small raceways can take additional flow, a larger portion of the 10 cfs can be sent that direction. The distribution of water between the small raceways and the Rangen Box will be adjusted by opening or closing a 14-inch butterfly valve that will be installed on the small raceway leg of the tee.

6. PROJECT SCHEDULE

If the Magic Springs Project is constructed, the target date to deliver 0.5 cfs to Rangen is January 19, 2015 and the target date to deliver up to 9.1 cfs to Rangen is April 1, 2015. The hearing for the 4th Mitigation Plan is scheduled for October 8-9. It is assumed the IDWR Director will render a favorable decision within two weeks. The proposed schedule in Figure 5 identifies the major tasks and their timeframes required to meet the target dates.

![Figure 5. Aqua Life Project Schedule](image-url)
7. PROJECT COST ESTIMATE

7.1. Capital Construction Cost Estimate

The Preliminary Opinion of Probable Cost developed for the 60% design is based on direct vendor material pricing, contractor installation input, and historical information SPF had available. Pipe, fitting, and valve material costs were based on direct vendor pricing obtained in April 2014. Pipeline installation costs of the project were developed based on information from reputable contractors. The 60% design contemplates a skid-mounted packaged pump station, including pumps, mechanical piping, valves, flow meter, variable frequency drives (VFDs) and associated controls, generator, and enclosure. Costs for this packaged pump station were obtained from a packaged pump station vendor in September 2014.

The estimate assumes Idaho Power does not need to upgrade their distribution facilities. The estimate also includes a construction contingency and engineering and construction services to finalize the design and support the construction effort.

Table 4 and Table 5 summarize the Preliminary Opinion of Probable Costs for the 60% design of the Magic Springs Project.

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>ESTIMATED COSTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PIPELINE AND APPURtenances</td>
<td>$1,352,313</td>
</tr>
<tr>
<td>2</td>
<td>PUMPING AND MECHANICAL</td>
<td>$394,268</td>
</tr>
<tr>
<td>3</td>
<td>ELECTRICAL AND CONTROLS</td>
<td>$118,062</td>
</tr>
<tr>
<td>4</td>
<td>MOBILIZATION, FEES, CONTINGENCY, ENGINEERING</td>
<td>$484,807</td>
</tr>
</tbody>
</table>

ESTIMATED DESIGN AND CONSTRUCTION COST $2,349,000

This estimate of probable cost reflects our professional opinion of accurate costs at this time based on current conditions at the project location. This estimate is subject to change through the project planning and design process. Actual construction cost will depend on the cost of labor, materials, equipment, and services provided by others, contractor’s methods of determining prices, competitive bidding and market conditions.

Table 4. Preliminary Opinion of Probable Cost – ABC
7.2. Annual System Operational Costs

If the Magic Springs Project is constructed there will be on-going operational and maintenance costs associated with the new system. A capital reserve fund is recommended to help with replacement costs of the equipment. Table 6 and Table 7 show an analysis of a Component Inventory and Capital Replacement Fund. This produces an annual dollar amount that should be included in the overall annual budget for this system.

On-going operational costs include electricity, operational labor, and preventative maintenance. These costs are summarized in Table 8 and Table 9. Water quality testing may be required but is not included in this estimate. The most significant annual cost will be the electrical. Currently a $0.06/kW-Hr cost is being used for the Idaho Power costs.
### Table 6. Component Inventory and Capital Replacement Analysis – ABC

<table>
<thead>
<tr>
<th>Equipment Description</th>
<th>Initial Cost</th>
<th>Expected Life</th>
<th>Replacement Year</th>
<th>Replacement Cost @ 3%</th>
<th>Annual Cost @ 6%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pipeline</td>
<td>$545,931</td>
<td>50</td>
<td>2065</td>
<td>$2,393,310</td>
<td>$8,243</td>
</tr>
<tr>
<td>(3) Turbine Pumps/Motors, 150 hp</td>
<td>$177,894</td>
<td>15</td>
<td>2030</td>
<td>$277,153</td>
<td>$11,907</td>
</tr>
<tr>
<td>(3) Variable Frequency Drives, 150-hp</td>
<td>$48,000</td>
<td>15</td>
<td>2030</td>
<td>$74,782</td>
<td>$3,213</td>
</tr>
<tr>
<td>PLC, HMI</td>
<td>$15,000</td>
<td>15</td>
<td>2030</td>
<td>$23,370</td>
<td>$1,004</td>
</tr>
<tr>
<td>Flow Meter</td>
<td>$7,200</td>
<td>12</td>
<td>2027</td>
<td>$10,265</td>
<td>$609</td>
</tr>
<tr>
<td>Mechanical Piping and Valves</td>
<td>$20,000</td>
<td>25</td>
<td>2040</td>
<td>$41,876</td>
<td>$763</td>
</tr>
<tr>
<td>Pump Station Enclosure</td>
<td>$30,300</td>
<td>25</td>
<td>2040</td>
<td>$63,441</td>
<td>$1,156</td>
</tr>
<tr>
<td>Pump Cans</td>
<td>$28,143</td>
<td>25</td>
<td>2040</td>
<td>$58,925</td>
<td>$1,074</td>
</tr>
<tr>
<td>Air Vacs</td>
<td>$19,250</td>
<td>25</td>
<td>2040</td>
<td>$40,305</td>
<td>$735</td>
</tr>
<tr>
<td>Drains</td>
<td>$10,500</td>
<td>25</td>
<td>2040</td>
<td>$21,985</td>
<td>$401</td>
</tr>
<tr>
<td>Pressure Control Valve, Iso Valves</td>
<td>$18,200</td>
<td>10</td>
<td>2025</td>
<td>$24,459</td>
<td>$1,856</td>
</tr>
<tr>
<td>Mainline Valves</td>
<td>$42,800</td>
<td>25</td>
<td>2040</td>
<td>$89,614</td>
<td>$1,633</td>
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<tr>
<td>Collection Box</td>
<td>$12,000</td>
<td>50</td>
<td>2065</td>
<td>$52,607</td>
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<tr>
<td>Generator</td>
<td>$93,062</td>
<td>25</td>
<td>2040</td>
<td>$194,851</td>
<td>$3,551</td>
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<tr>
<td><strong>Total Annualized Payment for Capital Reserve Fund</strong></td>
<td>$1,068,280</td>
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<td></td>
<td>$3,366,944</td>
<td>$36,327</td>
</tr>
</tbody>
</table>

Assumptions:
1) Inflation Rate = 3.0 %
2) Interest Rate = 6.0 %
3) All equipment costs and life expectancies are estimated.

### Table 7. Component Inventory and Capital Replacement Analysis – I&J

<table>
<thead>
<tr>
<th>Equipment Description</th>
<th>Initial Cost</th>
<th>Expected Life</th>
<th>Replacement Year</th>
<th>Replacement Cost @ 3%</th>
<th>Annual Cost @ 6%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pipeline</td>
<td>$459,660</td>
<td>50</td>
<td>2065</td>
<td>$2,015,106</td>
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<tr>
<td>(3) Turbine Pumps/Motors, 200 hp</td>
<td>$190,623</td>
<td>15</td>
<td>2030</td>
<td>$296,984</td>
<td>$12,759</td>
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<tr>
<td>(3) Variable Frequency Drives, 200-hp</td>
<td>$61,500</td>
<td>15</td>
<td>2030</td>
<td>$95,815</td>
<td>$4,116</td>
</tr>
<tr>
<td>PLC, HMI</td>
<td>$15,000</td>
<td>15</td>
<td>2030</td>
<td>$95,815</td>
<td>$4,116</td>
</tr>
<tr>
<td>Flow Meter</td>
<td>$7,200</td>
<td>12</td>
<td>2027</td>
<td>$10,265</td>
<td>$609</td>
</tr>
<tr>
<td>Mechanical Piping and Valves</td>
<td>$20,000</td>
<td>25</td>
<td>2040</td>
<td>$41,876</td>
<td>$763</td>
</tr>
<tr>
<td>Pump Station Enclosure</td>
<td>$30,300</td>
<td>25</td>
<td>2040</td>
<td>$63,441</td>
<td>$1,156</td>
</tr>
<tr>
<td>Pump Cans</td>
<td>$42,000</td>
<td>25</td>
<td>2040</td>
<td>$87,939</td>
<td>$1,603</td>
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<tr>
<td>Air Vacs</td>
<td>$13,750</td>
<td>25</td>
<td>2040</td>
<td>$28,789</td>
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<tr>
<td>Drains</td>
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<td>25</td>
<td>2040</td>
<td>$14,656</td>
<td>$267</td>
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<tr>
<td>Pressure Control Valve, Iso Valves</td>
<td>$18,200</td>
<td>10</td>
<td>2025</td>
<td>$24,459</td>
<td>$1,856</td>
</tr>
<tr>
<td>Mainline Valves</td>
<td>$58,700</td>
<td>25</td>
<td>2040</td>
<td>$122,905</td>
<td>$2,240</td>
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<tr>
<td>Generator</td>
<td>$121,720</td>
<td>25</td>
<td>2040</td>
<td>$254,855</td>
<td>$4,645</td>
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<tr>
<td><strong>Total Annualized Payment for Capital Reserve Fund</strong></td>
<td>$1,045,653</td>
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<td>$3,080,461</td>
<td>$38,484</td>
</tr>
</tbody>
</table>

Assumptions:
1) Inflation Rate = 3.0 %
2) Interest Rate = 6.0 %
3) All equipment costs and life expectancies are estimated.
### Table 8. Annual Operating Costs – ABC

<table>
<thead>
<tr>
<th>Item</th>
<th>Annual Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 150 HP Electrical Costs ($0.06/kW-h)</td>
<td>$109,789</td>
</tr>
<tr>
<td>Weekly Inspections ($200/week)</td>
<td>$10,400</td>
</tr>
<tr>
<td>Miscellaneous Maintenance</td>
<td>$5,000</td>
</tr>
<tr>
<td>Remote Monitoring</td>
<td>$2,450</td>
</tr>
<tr>
<td>Capital Reserve Fund</td>
<td>$36,327</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$163,966</strong></td>
</tr>
</tbody>
</table>

### Table 9. Annual Operating Costs – I&J

<table>
<thead>
<tr>
<th>Item</th>
<th>Annual Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 200 HP Electrical Costs ($0.06/kW-h)</td>
<td>$120,058</td>
</tr>
<tr>
<td>Weekly Inspections ($200/week)</td>
<td>$10,400</td>
</tr>
<tr>
<td>Miscellaneous Maintenance</td>
<td>$5,000</td>
</tr>
<tr>
<td>Remote Monitoring</td>
<td>$2,450</td>
</tr>
<tr>
<td>Capital Reserve Fund</td>
<td>$38,484</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$176,392</strong></td>
</tr>
</tbody>
</table>
APPENDIX A: 60% DESIGN DRAWING SET
### ABC Pump Station and Pipeline

<table>
<thead>
<tr>
<th>Pump Name</th>
<th>Type</th>
<th>Controls</th>
<th>Design Flow (gpm)</th>
<th>Design TDH (ft)</th>
<th>Pump Model, Or Approved Equal Number of Stages</th>
<th>Pump HP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duty Pump 1</td>
<td>Canned Lineshaft Turbine</td>
<td>VFD</td>
<td>2250</td>
<td>Goulds 14RHMC 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duty Pump 2</td>
<td>Canned Lineshaft Turbine</td>
<td>VFD</td>
<td>2250</td>
<td>Goulds 14RHMC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duty Pump 3</td>
<td>Canned Lineshaft Turbine</td>
<td>VFD</td>
<td>2250</td>
<td>Goulds 14RHMC</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### I&W Pump Station and Pipeline

<table>
<thead>
<tr>
<th>Pump Name</th>
<th>Type</th>
<th>Controls</th>
<th>Design Flow (gpm)</th>
<th>Design TDH (ft)</th>
<th>Pump Model, Or Approved Equal Number of Stages</th>
<th>Pump HP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duty Pump 1</td>
<td>Canned Lineshaft Turbine</td>
<td>VFD</td>
<td>2250</td>
<td>Goulds 14RJHC 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duty Pump 2</td>
<td>Canned Lineshaft Turbine</td>
<td>VFD</td>
<td>2250</td>
<td>Goulds 14RJHC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duty Pump 3</td>
<td>Canned Lineshaft Turbine</td>
<td>VFD</td>
<td>2250</td>
<td>Goulds 14RJHC</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### PUMP SCHEDULE

<table>
<thead>
<tr>
<th>Pump Name</th>
<th>Type</th>
<th>Control</th>
<th>Design Flow (gpm)</th>
<th>Design TDH (ft)</th>
<th>Number of Stages</th>
<th>Pump HP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duty Pump 1</td>
<td>Canned Lineshaft Turbine</td>
<td>VFD</td>
<td>2250</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duty Pump 2</td>
<td>Canned Lineshaft Turbine</td>
<td>VFD</td>
<td>2250</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duty Pump 3</td>
<td>Canned Lineshaft Turbine</td>
<td>VFD</td>
<td>2250</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
GENERAL NOTES:
1. CONTRACTOR shall be responsible for the completion of the work in accordance with the approved plans and specifications and to satisfy all applicable codes and ordinances in the area where the work is to be performed. Contractor is responsible for adherence to all local, state, and federal laws and regulations.
2. Any changes to the work or materials may be approved by the Engineer, architect, or inspector, but any unauthorized changes made by the Contractor is solely responsible for any resulting problems or damages.
3. The Contractor shall be responsible for the removal of all materials, equipment, and debris from the project site within a reasonable time after project completion.
4. The Contractor shall be responsible for the completion of all work in accordance with the approved plans and specifications.
5. The Contractor shall be responsible for the protection and preservation of all public and private property during the course of the work.
6. The Contractor shall be responsible for the completion of all work in accordance with the approved plans and specifications.
7. The Contractor shall be responsible for the completion of all work in accordance with the approved plans and specifications.
8. The Contractor shall be responsible for the completion of all work in accordance with the approved plans and specifications.
9. The Contractor shall be responsible for the completion of all work in accordance with the approved plans and specifications.
10. The Contractor shall be responsible for the completion of all work in accordance with the approved plans and specifications.

PIPELINE CONSTRUCTION NOTES:
1. The Contractor shall be responsible for the installation of the pipeline in accordance with the approved plans and specifications. All work shall be performed in accordance with the existing utility lines and encroachment permits.
2. The Contractor shall be responsible for the installation of the pipeline in accordance with the approved plans and specifications. All work shall be performed in accordance with the existing utility lines and encroachment permits.
3. The Contractor shall be responsible for the installation of the pipeline in accordance with the approved plans and specifications. All work shall be performed in accordance with the existing utility lines and encroachment permits.
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8. The Contractor shall be responsible for the installation of the pipeline in accordance with the approved plans and specifications. All work shall be performed in accordance with the existing utility lines and encroachment permits.

EROSION AND SEDIMENT CONTROL (ESC) NOTES:
1. The Contractor shall be responsible for the implementation of erosion and sediment control measures. All work shall be performed in accordance with the approved plans and specifications.
2. The Contractor shall be responsible for the implementation of erosion and sediment control measures. All work shall be performed in accordance with the approved plans and specifications.
3. The Contractor shall be responsible for the implementation of erosion and sediment control measures. All work shall be performed in accordance with the approved plans and specifications.
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5. The Contractor shall be responsible for the implementation of erosion and sediment control measures. All work shall be performed in accordance with the approved plans and specifications.
1. All drawings and construction shall conform to the 2006 International Building and Fire Code, as amended, in all regards.

2. References to ASTM and other standards shall refer to the latest edition developed by the applicable body. Refer to the specifications for information in addition to that covered by these structural drawings and notes. The following standards shall be used:

   c. For concrete structures: ACI 318-05 Building Code Requirements for Structural Concrete.

3. All dimensions shown in the drawings represent the design live load and the live load imposed by the building official. The project designer is responsible for providing the final in-place inspection during construction.

4. Reference to FATs, IBC, and other codes shall be noted in the text pertinent to the project.

5. WSDOT maintains the right to make changes or to have requirements for a project which are at variance with any standard, code, or specification mentioned in these drawings and notes.

6. This project was designed in accordance with the AISC 360-05 Specifications for Structural Steel Buildings 2005 edition.
Structural Loads

Snow Loads

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Wind Loads

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SEISMIC LOADS

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Footing Live Loads

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Building Roof Live Load

- 

Non-Parking Live Loads

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Railing Live Loads

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Walking Load

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Spectral Response Coefficient

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Searc System Design Criteria

- 

Concrete Mix Proportion

- 

Reinforcing, Prestressing and Post-Tensioning Steel

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Concrete Tests

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Additional Speckled

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Preceding

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Reinforcing Bar Splice

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Missile Impact Load

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Residual Live Loads

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Quality Assurance and Special Inspection-IBC 2012

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Special Inspection

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Steel Construction

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Concrete Construction and Post-Tension Construction

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Special Inspections

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Special Inspections Required

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Special Inspections Provided

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Special Inspections Being Performed

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Special Inspections Performed

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Special Inspections to Be Performed

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Special Inspections Being Performed

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Special Inspections Performed
**Foundation**

1. **NEW UTILITIES:** Contractor shall provide for the location of all new below grade utilities and coordinate placement with new footings per typical details for foundations at or adjacent to excavations and utilities.

2. **RETURNING WALLS:**
   - All ties and lengths indicated on drawings are estimated; actual length shall be determined by a Geotechnical Inspector. For loading purposes, the contractor shall provide an additional value of 10% for each pile length. This value shall be applied in variations in actual pile lengths.
   - The contractor shall determine the location of all adjacent underground utilities prior to bidding or starting operations. Drilling shall be performed without loss of ground and without engaging previously installed piles. Refer to the Geotechnical Report for recommended minimum distances and allow a minimum of 24 hours after the concrete is poured to complete backfilling for all concrete to the point of footing or pier elevation.
   - Pile or pipe types other than those indicated on the drawings may be substituted as a Substitution. Optional piles shall be subject to the approval of the Architect/Structural Engineer. Shop drawings shall be developed by referencing the Geotechnical Report and the Substitution. See Geotechnical report for further information. Geotechnical Inspector shall confirm that the bottoms of the piles are below the groundwater elevation.
   - Placing shall be done under the supervision of a qualified individual.
   - Damaged piles shall not be used.
   - Pile shall be removed if removed in any individual tip.

3. **CONCRETE:**
   - Design loading procedures shall be used. The concrete mix design shall be determined by the architect or the Engineer.
   - Concrete mix designs shall be submitted to the Structural Engineer for review. In the event the mix is not approved by the engineer, prior to the casting of the concrete, shop drawings shall be developed by referencing the Geotechnical Report and the Substitution. See Geotechnical report for further information. Geotechnical Inspector shall confirm that the bottoms of the piles are below the groundwater elevation.
   - All reinforcing bars shall be installed as shown on drawings. The contractor shall be responsible for the location of all necessary reinforcing bars for structural integrity and durability.
   - Placement shall be done under the supervision of a qualified individual.
   - Damaged reinforcing bars shall not be used.
   - Pile shall be removed if removed in any individual tip.

4. **SHORING:**
   - Shoring shall be done in accordance with ACI 318 and project specifications. Provide keys in construction joints unless detailed otherwise. Thoroughly clean, remove balances and satisfactorily seal and remove standing water in construction joints before placing new concrete. At vertical joints, seal with a bead of sealant cement or new concrete.
   - Roughtexture concrete shall be full a amplitude of 1/4 inch where masonry walls intersect concrete or where new concrete interfaces with existing concrete.
   - Clear cover of concrete over reinforcing bars shall be as follows:
     - Ceiling: 2 in.
     - Slab on grade: 2" clear from top
     - Slab on grade: 2 in.

5. **Concrete Strength Requirements:**
   - The contractor shall provide for proper dewatering of excavations from subsurface water.
   - Drainages, including foundation, roof, and surface drains, shall be designed as directed by the Geotechnical Report and Section 1805.

6. **Steel:**
   - All steel shall conform to ASTM A 143 and ASTM A 746. Coordinate placement with Geotechnical and Architectural/Structural Engineer. If average temperature at the site is below 50°, lightly-trafficked office/industrial buildi

7. **Concrete Mix Designs:**
   - Concrete mix designs shall be submitted to the Structural Engineer for review. In the event the mix is not approved by the engineer, prior to the casting of the concrete, shop drawings shall be developed by referencing the Geotechnical Report and the Substitution. See Geotechnical report for further information. Geotechnical Inspector shall confirm that the bottoms of the piles are below the groundwater elevation.
   - All reinforcing bars shall be installed as shown on drawings. The contractor shall be responsible for the location of all necessary reinforcing bars for structural integrity and durability.
   - Placement shall be done under the supervision of a qualified individual.
   - Damaged reinforcing bars shall not be used.
   - Pile shall be removed if removed in any individual tip.

8. **Shoring and Re-shoring:**
   - Shoring shall be done in accordance with ACI 318 and project specifications. Provide keys in construction joints unless detailed otherwise. Thoroughly clean, remove balances and satisfactorily seal and remove standing water in construction joints before placing new concrete. At vertical joints, seal with a bead of sealant cement or new concrete.
   - Roughtexture concrete shall be full a amplitude of 1/4 inch where masonry walls intersect concrete or where new concrete interfaces with existing concrete.
   - Clear cover of concrete over reinforcing bars shall be as follows:
     - Ceiling: 2 in.
     - Slab on grade: 2" clear from top
     - Slab on grade: 2 in.

9. **Concrete Strength Requirements:**
   - The contractor shall provide for proper dewatering of excavations from subsurface water.
   - Drainages, including foundation, roof, and surface drains, shall be designed as directed by the Geotechnical Report and Section 1805.

10. **Steel:**
    - All steel shall conform to ASTM A 143 and ASTM A 746. Coordinate placement with Geotechnical and Architectural/Structural Engineer. If average temperature at the site is below 50°, lightly-trafficked office/industrial buildi

11. **Concrete Mix Designs:**
    - Concrete mix designs shall be submitted to the Structural Engineer for review. In the event the mix is not approved by the engineer, prior to the casting of the concrete, shop drawings shall be developed by referencing the Geotechnical Report and the Substitution. See Geotechnical report for further information. Geotechnical Inspector shall confirm that the bottoms of the piles are below the groundwater elevation.
    - All reinforcing bars shall be installed as shown on drawings. The contractor shall be responsible for the location of all necessary reinforcing bars for structural integrity and durability.
    - Placement shall be done under the supervision of a qualified individual.
    - Damaged reinforcing bars shall not be used.
    - Pile shall be removed if removed in any individual tip.

12. **Shoring and Re-shoring:**
    - Shoring shall be done in accordance with ACI 318 and project specifications. Provide keys in construction joints unless detailed otherwise. Thoroughly clean, remove balances and satisfactorily seal and remove standing water in construction joints before placing new concrete. At vertical joints, seal with a bead of sealant cement or new concrete.
    - Roughtexture concrete shall be full a amplitude of 1/4 inch where masonry walls intersect concrete or where new concrete interfaces with existing concrete.
    - Clear cover of concrete over reinforcing bars shall be as follows:
      - Ceiling: 2 in.
      - Slab on grade: 2" clear from top
      - Slab on grade: 2 in.

13. **Concrete Strength Requirements:**
    - The contractor shall provide for proper dewatering of excavations from subsurface water.
    - Drainages, including foundation, roof, and surface drains, shall be designed as directed by the Geotechnical Report and Section 1805.

14. **Steel:**
    - All steel shall conform to ASTM A 143 and ASTM A 746. Coordinate placement with Geotechnical and Architectural/Structural Engineer. If average temperature at the site is below 50°, lightly-trafficked office/industrial buildi

15. **Concrete Mix Designs:**
    - Concrete mix designs shall be submitted to the Structural Engineer for review. In the event the mix is not approved by the engineer, prior to the casting of the concrete, shop drawings shall be developed by referencing the Geotechnical Report and the Substitution. See Geotechnical report for further information. Geotechnical Inspector shall confirm that the bottoms of the piles are below the groundwater elevation.
    - All reinforcing bars shall be installed as shown on drawings. The contractor shall be responsible for the location of all necessary reinforcing bars for structural integrity and durability.
    - Placement shall be done under the supervision of a qualified individual.
    - Damaged reinforcing bars shall not be used.
    - Pile shall be removed if removed in any individual tip.

16. **Shoring and Re-shoring:**
    - Shoring shall be done in accordance with ACI 318 and project specifications. Provide keys in construction joints unless detailed otherwise. Thoroughly clean, remove balances and satisfactorily seal and remove standing water in construction joints before placing new concrete. At vertical joints, seal with a bead of sealant cement or new concrete.
    - Roughtexture concrete shall be full a amplitude of 1/4 inch where masonry walls intersect concrete or where new concrete interfaces with existing concrete.
    - Clear cover of concrete over reinforcing bars shall be as follows:
      - Ceiling: 2 in.
      - Slab on grade: 2" clear from top
      - Slab on grade: 2 in.

17. **Concrete Strength Requirements:**
    - The contractor shall provide for proper dewatering of excavations from subsurface water.
    - Drainages, including foundation, roof, and surface drains, shall be designed as directed by the Geotechnical Report and Section 1805.
Structural Steel

Summary of drawings to structural engineer indicating fabrication of structural steel components. Include details of units, connections, splices, anchorages, splices, and other pertinent design. Include elevation drawings, indicating units and size. The drawing shall be dimensioned in accordance with the requirements of AISC Section 10.

1. DESIGN:
   A. Deck shall be provided with the steel deck primer paint color indicated on drawings and shall be fabricated in accordance with AWS D1.1 and AWS D1.8.
   B. Minimum bearing of steel deck shall be 2 inches.
   C. Thickness of the steel deck shall have a minimum bearing of 3/8 inches.
   D. Steel deck shall be attached to structural steel in accordance with the requirements of AWS D1.1 and AWS D1.8.

2. MATERIALS:
   A. Structural Steel Shapes Shall Conform to the following:
      - ASTM A36
      - ASTM A572
      - ASTM A992
   B. Deformed anchors shall be made of material conforming to ASTM A109.
   C. Welding tests and inspections, see specifications.

3. WELDING:
   A. All welding shall comply with the American Welding Society Standard AWS D1.11 and AWS D1.8. All weld symbols shall be detailed as required by the specifications and shall be shown on drawings. Include embedment drawings. Indicate welds by standard AWS symbols, distinguishing between shop and field welds.
   B. All structural shapes shall be welded smooth UNO.
   C. Structural floor system has been designed to accommodate a maximum of 0.10% axial load.

4. FOUNDATION:
   A. The application of the fireproofing to the steel members and steel deck is the responsibility of the contractor. The fireproofing shall be in accordance with the requirements of AWS D1.1 and AWS D1.8.
   B. Structural framing members have been designed to accommodate a maximum of 0.10% axial load.
   C. Structural floor system has been designed to accommodate a maximum of 0.10% axial load.

5. LIGHTING:
   A. The application of the fireproofing to the steel members and steel deck is the responsibility of the contractor. The fireproofing shall be in accordance with the requirements of AWS D1.1 and AWS D1.8.
   B. Structural framing members have been designed to accommodate a maximum of 0.10% axial load.
   C. Structural floor system has been designed to accommodate a maximum of 0.10% axial load.

6. ARCHITECTURAL EXPOSED STRUCTURAL STEEL
   A. Architecturally exposed structural steel (AES) shall be fabricated in accordance with the requirements of AES Section 10.
   B. All welds shall ground smooth UNO.
   C. See Architectural drawings for additional requirements. No requirements shown provide modulus for review prior to commencing fabrication.

7. METAL ACCESSORIES:
   A. All metal accessories are to have the same gauge as the decking, uno. Upon completion of erection, all welds on galvanized steel deck areas shall be de-stuffed, cleaned and touched up with a zinc rich primer.

8. ANCHOR STUDS, SHEAR STUDS, AND DEFORMED ANCHORS:
   A. Bolt holes in steel shall be 1/16 inch larger than nominal side of bolt. Submit style and layout for approval.
   B. Headed studs (shear and anchor) shall be made of material conforming to ASTM A496.
   C. Bolt holes in steel shall be 1/16 inch larger than nominal side of bolt. Submit style and layout for approval.

9. STEEL DECK:
   A. Deformed anchors is not allowed.
   B. Paragraphs 7.5.5 to 7.5.5.6 of AWS D1.1, are deleted.

10. ARCHITECTURAL DRAWINGS:
    A. Architecturally exposed structural steel (AES) shall be fabricated in accordance with the requirements of AES Section 10.
    B. All welds shall ground smooth UNO.

11. FIREPROOFING:
    A. The application of the fireproofing to the steel members and steel deck is the responsibility of the contractor. The fireproofing shall be in accordance with the requirements of AWS D1.1 and AWS D1.8.
    B. Structural framing members have been designed to accommodate a maximum of 0.10% axial load.
    C. Structural floor system has been designed to accommodate a maximum of 0.10% axial load.
    D. For fireproofing requirements, specifications and thickness, refer to the Architectural drawings.
    E. Do not prime paint or galvanize steel or decking where fireproofing is to be applied.

12. ARCHITECTURALLY EXPOSED STRUCTURAL STEEL:
    A. Architecturally exposed structural steel (AES) shall be fabricated in accordance with the requirements of AES Section 10.
    B. All welds shall ground smooth UNO.
    C. See Architectural drawings for additional requirements. No requirements shown provide modulus for review prior to commencing fabrication.
Plan Notes:
1. For structural design notes, see sheet S001 thru S008.
2. Backgrounds are shown for reference only.
3. Contractor shall verify existing structural conditions. If any discrepancies are found, contractor shall contact the Architect and Structural Engineer before performing alteration work.
4. Contractor to verify existing slab construction for attachments specified in these drawings. Notify Architect/Engineer of findings.
Plan Notes:

1. For structural design notes, see sheet S001 thru S00?.
2. Backgrounds are shown for reference only. The dimensions shown apply to structural elements only. For dimensions not shown, see architect of record submittal.
3. Contractor shall field verify existing structural conditions. If any discrepancies are found, contractor shall contact the architect and structural engineer before performing alteration work.
4. Contractor to verify existing slab construction for attachments specified in these drawings. Notify Architect/Engineer of findings.

Verify Scale Bar Measures One-Inch on Full Size Drawing.

rm / nh 144168.00

gt / jg

Magic Springs Project

Foundation Plan

1/2" = 1'-0"
TYPICAL DETAIL NOTES

1. For structural design notes, see sheet S001 thru S00?.
2. Architectural backgrounds are shown for reference only. The dimensions shown apply to structural elements only. For dimensions not shown, see architect of record submittal.
3. Contractor shall field verify existing structural conditions. If any discrepancies are found, contractor shall contact the Architect and Structural Engineer before performing alteration work.
4. For all top of footing, top of slab, and slab on grade construction, see foundation plan. Details not shown on this sheet, see all "S5" series drawings.

Diagram notes:
- Thrust block at cliff bottom
- Thrust block section
- Cliff bottom thrust block section
- Steel support at cliff top
- Pipe support at cliff face

Dimensions and materials:
- 24" dia. pipe
- Anchor plate with 2 high strength anchors located above ground level
- Sleeved connection to allow for proper fitting in field
- Base plate with batten anchors
- Roller connection
- Pipe fitting
- 4-#7 with 10" min. embed, set with 2-3/4" x 6 5/8" HILTI HVU capsule adhesive anchors, typ. each face
APPENDIX B: APPLICATION FOR TRANSFER OF WATER RIGHT
STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

MINIMUM REQUIREMENTS CHECKLIST
TO BE SUBMITTED WITH APPLICATION FOR TRANSFER

An application for transfer must be prepared in accordance with the minimum requirements listed below to be acceptable for processing by the Department. Incomplete applications will be returned. The instructions, fee schedule, Part 2A reports and additional Part 2B forms are available from any Department office or on the Department’s website at www.idwr.idaho.gov.

Name of Applicant(s) IGWA for North Snake GWD, Magic Valley GWD, Southwest ID

Check whether each item below is attached (Yes) or not applicable (N/A) for the proposed transfer.

Yes N/A * Means the item is always required and must be included with the application.

✓ * Signature of applicant(s) or applicant’s authorized representative on Application for Transfer Part 1. Include evidence of authority labeled Attachment #3 (see below) if signed by representative.
✓ * Application for Transfer Part 2A. Attach a Part 2A report describing each water right in the transfer as currently recorded.
✓ □ Complete and attach an Application for Transfer Part 2B for each water right for which only a portion is proposed to be changed through this transfer application.
✓ * Application for Transfer Part 3A is always required (see Attachment #7a below); Parts 3B and 3C must be completed for transfer applications proposing to change the nature of use of the water right(s) or proposing changes to supplemental right(s).
✓ * Correct fee submitted with transfer application form. (Fee schedule is on website and instructions for application for transfer.)

Attachments to Application - Label each attachment with the corresponding number shown below as Attachment #1-9.

☐ ✓ #1 If the applicant is a business, partnership, organization, or association, and not currently registered in the State of Idaho as a business entity, attach documentation identifying officers authorized to sign or act on behalf of right holder. (See Part 1.)
✓ ☐ #2a Water Right ownership documentation if Dept. records do not show the applicant as the current water right owner. **
✓ ✓ #2b If the ownership of the water right will change as a result of the proposed transfer to a new place of use, attach documentation showing land and water right ownership at the new place of use. Include documentation for all affected land and owner(s).**
  ** Additional fee(s) required for water right ownership changes; see fee schedule.
✓ ☐ #3 Documentation of authority to make the change if the applicant is not the water right owner.
✓ ☐ #4 Power of Attorney or documentation providing authority to sign or act on the applicant’s behalf. (See Part 1.)
✓ ✓ #5 If the transfer application proposes to change the point of diversion for a water right affecting the Eastern Snake Plain Aquifer (ESPA), attach the results of an ESPA analysis and a detailed mitigation plan to offset any depletions to hydraulically connected reaches of the Snake River. ESPA transfer spreadsheet and model grid labeled cells are available on the Department’s website at www.idwr.idaho.gov/WaterManagement/WaterRights/WaterRightTransfers/resources.htm.
✓ ✓ #6 Notarized statement of agreement or a statement on official letterhead signed by an authorized representative from each lien holder or other entity with financial interest in the water right(s) of land affected by the proposed transfer. (See Part 1.5.c.)
✓ * #7a Attach a map identifying the proposed point(s) of diversion, place(s) of use, and water diversion and distribution system details as described on the application. Include legal description labels. If only a portion of the right is proposed to be changed, identify the current location of the part of the existing right(s) proposed to be changed. (See Part 3A.)
✓ ✓ #7b If the transfer application proposes to change the place or purpose of use of an irrigation right attach a Geographic Information System (GIS) shape file, or an aerial photo or other image clearly delineating the location and extent of existing acres and changes to the place of use.
✓ ✓ #8a If the transfer application proposes to change the nature of use or period of use for one or more rights, provide documentation describing the extent of historic beneficial use for the water rights proposed to be transferred and document how enlargement will be avoided. (See Part 3B.) Additional fee required for proposed changes to nature of use; see fee schedule.
✓ ✓ #8b If the transfer application proposes to change the place of use of a supplemental irrigation right, provide documentation regarding the historic use of the supplemental right(s) and availability or reliability of the primary right(s) being supplemented, both before and after the proposed change. (See Part 3C.)
✓ ☐ #9 Other. Please describe: IGWA’s Fourth Mitigation Plan and Exhibits
STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

APPLICATION FOR TRANSFER OF WATER RIGHT
PART 1

Name of Applicant(s)  IGWA for North Snake GWD, Magic Valley GWD, Southwest ID  Phone 208-232-6101
Mailing address  See attached mailing list for each applicant  Email rcb@racinelaw.net
□ If applicant is not an individual and not registered to do business in the State of Idaho, attach documentation identifying officers authorized to sign or act on behalf of the applicant. Label it Attachment #1.
☑ Attach water right ownership documentation if Department records do not show the transfer applicant as the current water right owner. Label it Attachment #2a.
☑ If the ownership of the water right will change as a result of the proposed transfer to a new place of use, attach documentation showing land and water right ownership at the new place of use. Include documentation for all affected land and owner(s). Label it Attachment #2b.
☑ Attach documentation of authority to make the proposed change if the applicant is not the water right owner. Label it Attachment #3.

Provide contact information below if a consultant, attorney, or any other person is representing the applicant in this transfer process.
□ No Representative
Name of Representative  Randall C. Budge, T.J. Budge  Phone 208-2332-6101
Mailing address  PO Box 1391, Pocatello, ID 83204  Email rcb@racinelaw.net;tjb@racinelaw.net
☐ Send all correspondence for this application to the representative and not to the applicant.
☐ Send original correspondence to the applicant and copies to the representative.
☐ The representative may submit information for the applicant but is not authorized to sign for the applicant.
☐ The representative is authorized to sign for the applicant. Attach a Power of Attorney or other documentation providing authority to sign for the applicant and label it Attachment #4.

I hereby assert that no one will be injured by the proposed changes and that the proposed changes do not constitute an enlargement in use of the original right(s). The information contained in this application is true to the best of my knowledge. I understand that any willful misrepresentations made in this application may result in rejection of the application or cancellation of an approval.

Signature of Applicant or Authorized Representative  Randall C. Budge/T.J. Budge  Print Name and Title if applicable  September 10, 2014  Date

Signature of Applicant or Authorized Representative  Print Name and Title if applicable  Date

A. PURPOSE OF TRANSFER

1. □ Change point of diversion  □ Add diversion point(s)  ☑ Change place of use  □ Other
□ Change nature of use  □ Change period of use

2. Describe your proposal in narrative form, including a detailed description of non-irrigation uses to justify amounts transferred (i.e. number of stock, etc.), and provide additional explanation of any other items on the application. Attach additional pages if necessary and label it Part IA.2.
STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

APPLICATION FOR TRANSFER OF WATER RIGHT
PART 1 Continued

B. DESCRIPTION OF RIGHTS AFTER THE REQUESTED CHANGES. IF THE RIGHTS ARE BEING SPLIT, DESCRIBE PORTIONS TO BE CHANGED AS THEY WOULD APPEAR AFTER THE REQUESTED CHANGES.

<table>
<thead>
<tr>
<th>All or Part</th>
<th>Right Number</th>
<th>Amount (cfs/acre-ft)</th>
<th>Nature of Use</th>
<th>Period of Use</th>
<th>Source &amp; Tributary</th>
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<td>☑ 36-7072</td>
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<td>10 cfs total</td>
<td>Fish Propagation / Mitig</td>
<td>1/1 to 12/31</td>
<td>Thousand Springs/Snake R</td>
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Total authorized under rights __________ 10 cfs and/or __________ acre-feet.

2. Total amount of water proposed to be transferred or changed __________ cubic feet per second and/or __________ acre-feet per annum.

3. Point(s) of Diversion:
   ☑ No changes to point(s) of diversion are proposed - the following chart is therefore not completed. (Proceed to #4.)
   ☐ Attach Eastern Snake Plain Aquifer analysis if this transfer proposes to change a point of diversion affecting the ESPA.
   Label it Attachment #5.

<table>
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<tr>
<th>New?</th>
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<th>¼</th>
<th>Sec</th>
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<th>Rge</th>
<th>County</th>
<th>Source</th>
<th>Local name or tag #</th>
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</thead>
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4. Place of use: (If irrigation, identify with number of acres irrigated per ¼ ¼ tract.)
   ☑ No changes to place of use are proposed - the following chart is therefore not completed. (Proceed to #5.)

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<tr>
<th>Twp</th>
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<th>Acre Totals</th>
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Total Acres (for irrigation use)
5. General Information:

   a. Describe the complete diversion system, including how you will accommodate a measuring device and lockable controlling works should they be required now or in the future:
The Districts will pump and pipe water from Magic Springs facility to the Rangen hatchery. Detailed plans and specifications include pumps, motors, measuring device and controlling works per engineering submitted in Fourth Mitigation Plan, CM-MP-2014-006.

   b. Who owns the property at the point(s) of diversion? SeaPac of Idaho, Inc.

If other than the applicant, describe the arrangement enabling the applicant to access the property for the diversion system: Letter of Intent between Applicants and SeaPac of Idaho, Inc., copy attached.

   c. Are the lands from which you propose to transfer the water right subject to any liens, deeds of trust, mortgages, or contracts?

   If yes, ☐ Attach a notarized statement from the holder of the lien, deed of trust, mortgage or contract agreeing to the proposed changes on official letterhead signed by an authorized representative. Label it Attachment #6. List the name of the entity and type of lien: N/A

   It is the applicant’s responsibility to provide notice to lien holder, trustee, mortgagor, or contract holder of the proposed changes that may impact or change the value of the water rights or affected real property. Any misrepresentation of legal encumbrance on this application may result in rejection of the application or cancellation of an approval.

   d. Describe the effect on the land now irrigated if the place or purpose of use is changed pursuant to this transfer:

   N/A

   e. Describe the use of any other water right(s) for the same purpose or land, or the same diversion system as right(s) proposed to be transferred at both the existing and proposed point(s) of diversion and place(s) use:

   Rangen has (5) decreed water right nos. 36-00134B, 36-135A, 36-15501, 36-02551, 36-07694 diverted from the Martin-Curren Tunnel tributary to Billingsley Creek for fish propagation, irrigation and domestic uses.

   f. To your knowledge, has/is any portion of the water right(s) proposed to be changed:

   Yes ☑ No ☐

   ☑ undergone a period of five or more consecutive years of non-use,

   ☑ currently leased to the Water Supply Bank,

   ☑ currently used in a mitigation plan limiting the use of water under the right, or

   ☑ currently enrolled in a Federal set-aside program limiting the use of water under the rights?

   If yes, describe:
A. DESCRIPTION OF RIGHT(S) AS RECORDED

For each water right listed in Part 1B.1 of the application, attach a Part 2A report obtained from any Department office or from the Department’s website @ www.idwr.idaho.gov. Water Right Transfers, Step 1. Insert Part 2A reports into the application following Part 1.

B. IF ONLY A PORTION OF THE RIGHT IS PROPOSED TO BE CHANGED, DESCRIBE THE PORTION BEING CHANGED AS IT APPEARS BEFORE THE REQUESTED CHANGES

☑ Complete and attach one copy of Part 2B for each right for which only a portion is proposed to be changed. If the entire right is proposed to be changed, Part 2B is not applicable. Additional copies of the Part 2B form can be obtained from any Department office or from the Department’s website @ www.idwr.idaho.gov. Water Right Transfers, Step 3, or Water Right Forms, Changes in Use. Insert completed Part 2B forms into the application following Part 2A of the same water right.

Right Number: 36-7072

1. amount ______ 10 CFS total (cfs/ac-ft) for ______ Fish Propagation ______ purposes from ______ to ______ 1/1 ______ 12/31
   amount ______ (cfs/ac-ft) for ______ purposes from ______ to ______
   amount ______ (cfs/ac-ft) for ______ purposes from ______ to ______
   amount ______ (cfs/ac-ft) for ______ purposes from ______ to ______
   amount ______ (cfs/ac-ft) for ______ purposes from ______ to ______
   amount ______ (cfs/ac-ft) for ______ purposes from ______ to ______
   amount ______ (cfs/ac-ft) for ______ purposes from ______ to ______

2. Lands irrigated or place of use: (If irrigation, identify with number of acres irrigated per ¼ ¼ tract.)

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Total Acres (for irrigation use)  N/A
STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

APPLICATION FOR TRANSFER OF WATER RIGHT
PART 3

A. PLAT MAP (See Part 3A of Instructions for application for transfer for complete requirements.)

☐ Attach a map of the diversion, measurement, control, and distribution system. Label it Attachment #7a.
☐ If the transfer application proposes to change the place or purpose of use of an irrigation right attach a Geographic Information System (GIS) shape file, or an aerial photo or other image clearly delineating the location and extent of existing acres and changes to the place of use. Label it Attachment #7b. If the place of use currently consists of a permissible place of use, then the attachment is not required if the application contains a clear statement that the boundaries for the place of use are not proposed to be changed by the transfer and the total number of irrigated acres within the place of use before and after the transfer is clearly stated.

B. CHANGES IN NATURE OF USE (Water Balance)

☐ If you propose to change the nature of use or period of use of all or part of the rights(s) listed in this application, attach documentation describing the extent of historic beneficial use of the portion of the right(s) proposed to be changed. Also attach documentation showing that the portion of the right(s) to be changed will not be enlarged in rate, volume, or consumptive use through the proposed change. Label it Attachment #8a.

C. PLACE OF USE CHANGES TO SUPPLEMENTAL IRRIGATION RIGHTS

☐ If you propose to change the place of use of a supplemental irrigation right, answer below and attach supporting documentation. Label it Attachment #8b.

Describe how the supplemental water rights have been used historically in conjunction with other water rights at the existing place of use. Describe the time during the irrigation season that the supplemental rights have been used. Include information about the availability or reliability of the primary right(s) being supplemented, both before and after the change. If the applicant is proposing to change a supplemental irrigation right to a primary right, provide the information required on Part 3B above:

N/A

FOR DEPARTMENT USE ONLY

Transfer contains ____________ pages and ____________ attachments.

Received by ____________ Date ____________ Preliminary check by ____________ Date ____________

Fee paid ____________ Date ____________ Receipted by ____________ Receipt # ____________

Add'l fee paid ____________ Date ____________ Receipted by ____________ Receipt # ____________
Attachment 1

Mailing List and
Special Powers of Attorney
ATTACHMENT 1

APPLICANT’S ADDRESSES AND CONTACT INFORMATION

Idaho Ground Water Appropriators, Inc. (IGWA)
c/o Randall C. Budge
P.O. Box 1391
Pocatello, Idaho 83204
rcb@racinelaw.net
tjb@racinelaw.net

North Snake Ground Water District
Lyn Carlquist, Chairman
c/o Joyce Moreno, Secretary
152 E Main St
Jerome, ID 83338
nsgwd@safelink.net
carlquil@yahoo.com

Magic Valley Ground Water District
Dean Stevenson, Chairman
c/o Emily Haynes, Secretary
PO Box 430
Paul, ID 83347
desteve@pmt.org
mvgwd@hotmail.com

Southwest Irrigation District
c/o William Parsons, Attorney
137 W 13th St
Burley, Idaho 83318
wparsons@pmt.org
csearle@pmt.org
SPECIAL POWER OF ATTORNEY FOR WATER RIGHTS

The undersigned hereby appoints the law firm of RACINE OLSON NYE BUDGE & BAILEY, CHARTERED, 201 E. Center Street, Post Office Box 1391, Pocatello, Idaho 83204, my/our true and lawful attorney for the purpose of dealing with the Idaho Department of Water Resources relative to the management and transaction of water rights, and to allow them to receive all information, opinions, and records regarding water rights, and to sign and submit applications and other filings on my/our behalf.

DATED this 5th day of May, 2014.

NORTH SNAKE GROUND WATER DISTRICT

By:

Name: Lynn Carlquist
Title: Chairman

STATE OF IDAHO
County of Bannock

On this 3rd day of May, 2014, before me, the undersigned, a Notary Public in and for said State, personally appeared Lynn Carlquist, known or identified to me to be the Chairman of the company that executed the instrument or the person who executed the instrument on behalf of said company, and acknowledged to me that such company executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and seal the day and year first above written.

RANDALL C. BUDGE
NOTARY PUBLIC FOR IDAHO
Residing at: Pocatello, ID
Commission expires: 10/31/14
SPECIAL POWER OF ATTORNEY FOR WATER RIGHTS

The undersigned hereby appoints the law firm of RACINE OLSON NYE BUDGE & BAILEY, CHARTERED, 201 E. Center Street, Post Office Box 1391, Pocatello, Idaho 83204, my/our true and lawful attorney for the purpose of dealing with the Idaho Department of Water Resources relative to the management and transaction of water rights, and to allow them to receive all information, opinions, and records regarding water rights, and to sign and submit applications and other filings on my/our behalf.

DATED this 2nd day of May, 2014.

MAGIC VALLEY GROUND WATER DISTRICT

By: __________________________
   Name: Dean Stevenson
   Title: Chairman

STATE OF IDAHO

County of {Minidoka

On this 2nd day of May, 2014, before me, the undersigned, a Notary Public in and for said State, personally appeared Dean Stevenson, known or identified to me to be the Chairman of the company that executed the instrument or the person who executed the instrument on behalf of said company, and acknowledged to me that such company executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and seal the day and year first above written.

NOTARY PUBLIC FOR IDAHO
Residing at: Reedsport, Oregon
Commission expires: 8-4-2017

[Stamp]
SPECIAL POWER OF ATTORNEY FOR WATER RIGHTS

The undersigned hereby appoints the law firm of RACINE OLSON NYE BUDGE & BAILEY, CHARTERED, 201 E. Center Street, Post Office Box 1391, Pocatello, Idaho 83204, my/our true and lawful attorney for the purpose of dealing with the Idaho Department of Water Resources relative to the management and transaction of water rights, and to allow them to receive all information, opinions, and records regarding water rights, and to sign and submit applications and other filings on my/our behalf.

DATED this ___ day of May, 2014.

SOUTHWEST IRRIGATION DISTRICT

By:  
Name:  Randy Brown
Title:  Chairman

STATE OF IDAHO )
County of _Carson_ )

On this ___ day of May, 2014, before me, the undersigned, a Notary Public in and for said State, personally appeared Randy Brown, known or identified to me to be the Chairman of the company that executed the instrument or the person who executed the instrument on behalf of said company, and acknowledged to me that such company executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and seal the day and year first above written.

WILLIAM A. PARSONS
NOTARY PUBLIC
STATE OF IDAHO
SPECIAL POWER OF ATTORNEY FOR WATER RIGHTS

The undersigned hereby appoints the law firm of RACINE OLSON NYE BUDGE & BAILEY, CHARTERED, 201 E. Center Street, Post Office Box 1391, Pocatello, Idaho 83204, my/our true and lawful attorney for the purpose of dealing with the Idaho Department of Water Resources relative to the management and transaction of water rights, and to allow them to receive all information, opinions, and records regarding water rights, and to sign and submit applications and other filings on my/our behalf.

DATED this 2nd day of May, 2014.

IDAHO GROUND WATER APPROPRIATORS, INC. (IGWA) acting for and on behalf of its Ground Water District members

By: ___________________________ 
Name:  Tim Deeg 
Title:  President

STATE OF IDAHO
County of Bannock

On this 2nd day of May, 2014, before me, the undersigned, a Notary Public in and for said State, personally appeared Tim Deeg, known or identified to me to be the President of the company that executed the instrument or the person who executed the instrument on behalf of said company, and acknowledged to me that such company executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and seal the day and year first above written.

Tessa P. Sparrow 
Notary Public for Idaho 
Residing at: Pocatello, ID 
Commission expires: 10/05/2015

[Notary Seal]
Attachment 1A.2.

Purpose of Transfer
ATTACHMENT

PART 1A.2. – Purpose of Transfer – Magic Springs Project

The purpose of the Transfer Application is to change the place of use for up to 10 CFS of water under Water Right No. 7072 (Attachment Part 2 A) from SeaPac of Idaho, Inc (“SeaPac”) to the head of Billingsley Creek/Curren Ditch and/or the Rangen Facility for fish propagation and mitigation pursuant to the District’s Fourth Mitigation Plan (“Plan”) pending in Case No. CM-MP-2014-006 (Attachment #7a).

The Plan provides for the use of up to 10 CFS of spring water discharged from the ESPA at Magic Springs to be pumped via buried pipeline approximately 2.5 miles to Rangen’s place of use near the head of Billingsley Creek. This water is currently used for fish production year round and would be delivered to Rangen for fish production and mitigation year round. The Plan includes the design and construction of an intake, pump station with pumps, motors and related equipment including necessary redundancy to continuously pump up to a maximum of 10.0 CFS water from Magic Springs to Rangen.

A copy of the Letter of Intent with SeaPac is Attachment #1b. Attachments #7a are aerial maps depicting the location of SeaPac, the pipeline and the new points of diversion and place of use.

The transfer and delivery would occur on an “as needed” basis to meet the mitigation obligation to Rangen, which is phased in over five years up to a maximum of 9.1 CFS. The maximum 9.1 CFS obligation to Rangen may be reduced by future orders of the Director or Courts, by other mitigation credits and/or other mitigation plans to Rangen. These credits and other direct deliveries may vary over time and may include such things as credits for CREP, conversions and recharge as well as other direct water deliveries to Rangen under other mitigation plans. Based on known credits at this time, it is estimated that approximately 10.0 CFS is the maximum amount of water that would be delivered from the Magic Springs facility to Rangen in the future. The transfer is requested for up to a maximum of 10 CFS which substantially exceeds the present and most likely exceeds all future mitigation obligations to Rangen to provide excess that might be needed for mitigation in the future at Rangen.

The transferred water right may be acquired by IGWA from SeaPac, pursuant to the Letter of Intent.

The approval of the transfer requested is contingent upon:

A. IGWA and/or the Districts securing an Order from IDWR approving the Fourth Mitigation Plan providing for the delivery of 10 CFS from SeaPac’s Magic Springs water rights to satisfy the mitigation obligation to Rangen;

B. IGWA and/or the Districts proceeding to construct the Magic Springs project and implement the Fourth Mitigation Plan.
C. The existence of a continuing mitigation obligation to Rangen that is not satisfied by other means.

This Transfer Application supports the Plan and is an integral part of the Thousand Springs Water Supply Settlement Framework proposed by the State of Idaho, Attachment 5.
Attachment 1b.

Letter of Intent
LETTER OF INTENT

USE OF WATER FROM SEAPAC OF IDAHO, INC.’S MAGIC SPRINGS FACILITY, CONSTRUCTION OF PUMP STATION AND PIPELINE IN EXCHANGE FOR WATER FROM THE AQUA LIFE FACILITY

This Letter of Intent (“LOI”) is entered into by and between Idaho Ground Water Appropriorators, Inc. (“IGWA”), acting for and on behalf of North Snake Ground Water District, Magic Valley Ground Water District and Southwest Irrigation District (collectively “Districts”), and SeaPac of Idaho, Inc. (“SeaPac”).

RECITALS

A. In response to Rangen, Inc.’s (“Rangen”) water delivery call, the Idaho Department of Water Resources (“IDWR”) determined in its January 29, 2014 order that holders of ground water rights junior to July 13, 1962 must provide 9.1 cfs of direct flow to Rangen. Other delivery calls are pending or may be filed by other Hagerman Valley water right holders seeking to curtail junior ground water users.

B. IGWA represents ground water districts whose members consist of irrigators, municipalities, and commercial and industrial entities with ground water rights. Many of the ground water districts’ member’s water rights are junior to Rangen and certain other water rights in the Thousand Springs reach of the Hagerman Valley and are subject to curtailment unless a mitigation plan is approved providing replacement water.

C. IGWA and SeaPac support the concepts and implementation of the State of Idaho’s Thousand Springs Water Supply Settlement Framework designed to provide recharge and other means to stabilize the aquifer, to improve water supplies in the Hagerman Valley and to resolve conflicts between junior and senior water right holders.

D. The Idaho Water Resource Board (“IWRB”) owns and operates the Aqua Life Aquaculture Facility Hatchery (“Aqua Life”) and has entered into a Letter of Intent with IGWA to make available to IGWA by lease or purchase up to ten (10) cfs of its Aqua Life water rights from adjacent springs as needed to meet the mitigation obligation to Rangen and others in the Hagerman valley. IGWA has entered into negotiations with IWRB seeking to lease and acquire ownership of all of Aqua Life.

E. SeaPac currently has a short-term lease of Aqua Life from IWRB and desires to continue its Aqua Life operations by securing ownership and/or a long-term lease.
F. IGWA desires to secure water from SeaPac’s Magic Springs to provide a supply of water for mitigation purposes to Rangen and to other senior rights in the Hagerman Valley.

G. IGWA and SeaPac desire to enter into this Letter of Intent (“LOI”) to set forth their intent to commence negotiation of a final agreement providing for the exchange of Magic Springs water for Aqua Life water consistent with the terms set forth below.

TERMS

The Agreement shall have the following terms and conditions:

1. SeaPac will lease or sell to IGWA up to ten (10) cfs of first use water from its Magic Springs water right nos. 36-7072 and 36-8356 and also will provide access to allow IGWA to utilize all discharge water from its Magic Springs facilities as needed to provide mitigation to other water right holders in the Hagerman valley.

2. In exchange for water from Magic Springs, IGWA will secure ownership or control of Aqua Life water right nos. 36-1044, 36-2734, 36-15476, 36-2414, and 36-2338 by long-term lease or purchase from IWRB and make them available to SeaPac.

3. IGWA will pay all costs to design, construct, operate and maintain the water collection and intake system, pump station, pipeline and other facilities necessary to deliver up to 10 cfs of first use water together with discharge water from Magic Springs to the head of Billingsley Creek directly up gradient from the Rangen hatchery and/or other locations in the Hagerman valley for mitigation purposes. IGWA will ensure that the diversion and delivery facilities to be constructed will not interfere with the use of SeaPac’s remaining water rights at Magic Springs.

4. IGWA shall be responsible to secure from IDWR approval of such mitigation plans, transfer applications and other permits as may be required to change the point of diversion and place of use to accomplish the delivery of Magic Springs water for mitigation purposes. SeaPac hereby grants consent to IGWA to file and process such mitigation plans, transfer applications based on this LOI, with the approvals made subject to this LOI and the contemplated final Agreement between the parties.

5. SeaPac will grant IGWA permanent easements at Magic to design, construct, operate and maintain the water intake and collection facilities, pump station, pipeline and other facilities as necessary for the delivery of water to other locations for mitigation purposes.

6. IWRB will cooperate with IGWA and provide all necessary documents to conduct such investigation as it shall deem appropriate.

7. The Agreement will be contingent upon: (a) IGWA securing an order from IDWR approving mitigation plans providing for the delivery SeaPac’s Magic Springs water rights to satisfy the mitigation obligations to Rangen and/or others in the Hagerman valley; (b) IGWA
securing an order from IDWR approving the transfer of the point of diversion and place of use (as necessary) from SeaPac to Rangen and other locations for mitigation; (c) IGWA proceeding to construct and implement the pump and pipeline facilities pursuant to an approved mitigation plan; and IGWA securing ownership or control by long-term lease of Aqua Life and providing it to SeaPac.

8. This LOI may be executed in counterparts, each of which shall be deemed to be an original, but all of which, taken together, shall constitute but one and the same agreement. Delivery of an executed counterpart of this LOI via facsimile transmission shall be as effective as delivery of an original signed copy. Thereafter, the parties shall exchange executed originals of this LOI.

9. This LOI is intended as a general expression of the terms and conditions, under which the parties are willing to proceed to prepare, negotiate and if acceptable to all parties in their respective sole discretion, execute a final Agreement. Neither this LOI nor the execution hereof as provided below, shall be binding on any party until the formal Agreement is executed by all parties.

10. Upon execution of this LOI SeaPac will provide access to IGWA to begin engineering work, IGWA will proceed to file and process with IDWR mitigation plans and transfer applications as contemplated and the parties will proceed to negotiate a final Agreement incorporating the terms and conditions as outlined above.

Idaho Ground Water Appropriators, Inc.

By: Tim Deeg, President

SeaPac of Idaho, Inc.

By:
APPENDIX C: AMEC TEMPERATURE ANALYSIS (TO BE ADDED)
APPENDIX D:  HAGERMAN HIGHWAY DISTRICT APPROVAL
(TO BE ADDED)