

06/07/2013

MEMORANDUM

TO: John Tindall
Engineering Manager, Coeur d'Alene Regional Office

FROM: Matt Plaisted
Coeur d'Alene Regional Office

SUBJECT: Staff Analysis for Draft Wastewater Reuse Permit M-188-03,
Black Rock Utilities

1. PURPOSE

The purpose of this memorandum is to satisfy the requirements of the *Recycled Water Rules* IDAPA 58.01.17.400, for issuing wastewater reuse permits (WRPs). This memorandum addresses draft WRP No. M-188-03 for the municipal wastewater treatment and reuse system owned and operated by Black Rock Utilities (BRU). BRU's treatment and reuse system is currently permitted under the terms of WRP No. LA-000188-02.

2. SUMMARY OF EVENTS

The Department of Environmental Quality (DEQ) issued Permit No. LA-000188-02 to Black Rock Utilities (BRU) on September 16, 2009. The permit is for continued operation of the wastewater treatment and reuse system serving Black Rock Utilities. These facilities are located approximately seventeen (17) miles south of Coeur d'Alene, near Rockford Bay on Lake Coeur d'Alene, in Kootenai County. The purpose of the draft WRP is to amend Permit No. LA-000188-02, which will expire on September 4, 2014.

A permit renewal application from Black Rock Utilities was received on January 18, 2013, and largely serves as the basis for the terms and conditions contained in the draft permit. As required by the *Recycled Water Rules*, the draft permit will be presented for a public comment period. After the comment period has closed, DEQ will provide written responses to all relevant comments and prepare a final permit for Black Rock Utilities' wastewater reuse facilities.

3. PROCESS AND SITE DESCRIPTIONS

No modifications have been made to the irrigation and treatment processes discussed in the staff analysis for BRU's previous permit. For complete discussions regarding the treatment system, refer to the staff analysis for the draft version of Permit No. LA-000188-02, dated June 23, 2009. A summary of the wastewater and irrigation system is included below.

Black Rock Utilities is a non-profit utility owned by the Black Rock Homeowner's Association. BRU provides wastewater services to three developments; The Club at Black Rock, The Estates at Black Rock (formerly The Ridge at Black Rock Bay), and the Rock Creek Golf Club of Idaho (formerly Black Rock North). BRU provides wastewater services to the Worley Fire Station and Camp Kootenai as well. The Club at Black Rock and Rock Creek Golf Club of Idaho developments each include a golf course and related facilities. Currently, there are no residential connections from the Rock Creek Club of Idaho development. BRU currently serves

117 equivalent residence units (ERUs), and is projected to serve 736 ERUs at full build-out. Each connection includes a septic tank and effluent is pumped into a pressure main via a septic tank effluent pump (STEP) system. There are two lift stations within the lower portions of the collection system.

Effluent pumped to the wastewater treatment facility (WWTF) is distributed equally to four (4) fixed film activated sludge treatment (FAST) units. There are currently five (5) FAST units constructed, however only four are operational. An additional three fast units will be installed as flows increase. A central blower unit collects and vents headspace air through a subsurface biofilter for odor control.

Effluent from the FAST units discharges into a composite wet well where a 12.5% sodium hypochlorite solution is added prior to discharging to a 17-million-gallon (MG) storage lagoon. The lagoon is lined with a 60-mil HDPE liner. The lagoon is sized to store approximately 7 months of wastewater. A series of subsurface air diffusers were installed in the south end of the lagoon in 2012 to create circulation and prevent excessive algae growth near the lagoon outlet. Additional diffusers will be installed in 2013 to further increase circulation in the lagoon. Two underdrains daylight at the exterior of the lagoon dike and are monitored for discharge. There have been no significant discharges from these underdrains that would indicate wastewater is leaking from the lagoon. The lagoon was seepage tested in 2010 and results determined seepage was less than the rate allowed in the Idaho Wastewater Rules.

Two wet wells are located beneath the controls building at the south end of the lagoon. Each wet well is equipped with a 20-Hp vertical turbine pump with variable frequency drives capable of pumping up to 500 gpm. Water from the wet well can be pumped back to the lagoon for recirculation or through two 48-inch diameter pressure sand filters. Following filtration, effluent is injected with a 12.5% sodium hypochlorite solution and then flows through 1,560 feet of 14-inch diameter pipe for chlorine contact. The chlorine contact pipeline is located in the west dike of the lagoon.

Following chlorine contact, recycled water can be diverted back to the lagoon, to the Class B irrigation pond, or to any of the Class C irrigation sites. The Class C hydraulic management units (MU) include the poplar stands surrounding the WWTF (MU-1A, MU-1B, and MU-1C) and the grass pastures (MU-2A and MU-2B) located east of the WWTF, off of Loffs Bay Road and Estrella Drive. The Class B irrigation sites include the driving range and Holes 1-8 of the Rock Creek Golf Club of Idaho golf course (MU-6, MU-7, and MU-8). The Class B sites were permitted before they were actually constructed and the acreage listed in the permit differs from the actual acreage of the irrigation sites. The management units, areas, and crops are listed in Table 1 below. BRU has requested two additional MUs (MU-4A, and MU-4B), which make up the Club at Black Rock golf course driving range, be added in this permit to allow irrigation of Class B effluent. Further discussion on the proposed HMUs is included in Section 4.2 below.

Table 1

HMU	Irrigation Class	Area (Ac)	Crop
1A	C	4.3	Poplar Trees
1B	C	4.4	Poplar Trees
1C	C	5.8	Poplar Trees
2A	C	5.3	Field Grass
2B	C	8.5	Field Grass
4A*	B	4.7	Turf Grass
4B*	B	3.9	Turf Grass
6	B	24.3	Turf Grass
7	B	12.7	Turf Grass

8	B	16.5	Turf Grass
*HMUs proposed by permittee but not included in draft permit			

The Class C irrigation sites include the poplar stands surrounding the WWTF and the horse pastures located east of the WWTF. The poplar stands include approximately 14.5 acres of mature poplars. Irrigation is accomplished via a drip system with emitters located around the base of each tree. The horse pasture to the east of the WWTF is irrigated with hand-set lines. Pasture grass is grown on the two pastures and horses are brought in for grazing. A grazing plan has been approved by DEQ.

The Class B irrigation sites include Holes 1 through 8 as well as the driving range at the Rock Creek Golf Club of Idaho. Class B effluent is pumped approximately two miles to the irrigation pond at the Rock Creek Club of Idaho golf course. Effluent is mixed with lake water in this pond and the combined irrigation water overflows and cascades down into a second irrigation pond. Black Rock Utilities was approved for Class B irrigation in 2012. Prior to 2012, the Class B sites were irrigated with Class C recycled water because the golf course was not open to the public. Class B was not applied in 2012 due to excessive algae in the lagoon that prevented the filtration system from meeting effluent turbidity limits. The turbidity limits in the current permit are based on the old turbidity standards. Further discussion on turbidity limits is included in Section 4.2 below.

The site consists of silt loams to depths of 60-65 inches. Groundwater is generally greater than 36 inches below ground surface during the growing season as measured in the piezometers at each irrigation site. The Groundwater Characterization and Monitoring Plan prepared for the site determined that groundwater generally flows to the south and east towards Lake Coeur d'Alene. Lake Coeur d'Alene is located approximately 2700 feet south of the WWTF, and approximately 2100 feet east of the nearest HMU (MU-8).

4. PERMITTING DISCUSSION

The following sections outline changes made to the terms of the existing permit, based on changes requested by the permittee, evaluations of past performance with previous permit requirements, and/or updates required by changes to the *Recycled Water Rules* or any other applicable regulatory standards. Terms and conditions that are unchanged from the previous permit and remain applicable to the facility are not addressed in this document.

4.1 Compliance Schedule for Required Activities – Section 3

This section includes a discussion on the status of compliance activities in the current permit, and compliance activities proposed in the draft permit.

4.1.1 Status of compliance activities in current permit.

CA-188-01 Plan of Operation: Following issuance of permit LA-000188-02, an updated plan of operation (O&M Manual) was submitted to DEQ and approved in a letter dated October 15, 2010 to Black Rock Utilities. Changes to monitoring requirements as discussed in this staff analysis will require the plan of operation be updated to reflect future permit conditions.

CA-188-02 Class B Pilot Study Plan: The Class B study plan was submitted to DEQ and approved on January 26, 2012. There are no further requirements associated with this compliance activity.

CA-188-03 Class B Pilot Study Report: Irrigation with Class B effluent was postponed until 2012 due to the Rock Creek Club of Idaho golf course not being open. During the 2011 irrigation season, the Class B pilot study was conducted to demonstrate compliance with the current permit limits. The study concluded that the WWTF was capable of treating wastewater to Class B standards. The Pilot Study Report was approved by DEQ in a letter dated July 2, 2012. There are no further requirements associated with this compliance activity.

CA-188-04 Lagoon Seepage Procedure: The Lagoon Seepage Procedure was approved by DEQ on April 9, 2010. There are no further requirements associated with this compliance activity during this permit cycle.

CA-188-05 Lagoon Seepage Test: The Lagoon Seepage Test was conducted in April of 2010 and results determined that the seepage rate from the lagoon was no greater than 0.055 inches per day, which is less than the allowable limit of 0.25 inches per day for lagoons constructed prior to April 17, 2007. The seepage test was approved by DEQ in a letter dated June 23, 2010. The lagoon will need to be tested again in 2020; therefore the draft permit will include a compliance activity for lagoon seepage testing.

CA-188-06 Groundwater Characterization and Monitoring Plan: A Groundwater Characterization and Monitoring Plan was submitted to DEQ and approved in a letter dated September 30, 2010. The Plan concluded that impacts to groundwater were unlikely but recommended a groundwater-monitoring plan be implemented. The draft permit will include a compliance activity to prepare and implement a groundwater-monitoring plan.

4.1.2 Compliance Activities in Draft Permit

CA-188-01: The draft permit requires the updated O&M Manual to be completed and submitted to DEQ within twelve (12) months of permit issuance. The updated O&M Manual must include any changes to the reuse system, operations, monitoring, and reporting processes required by permit M-188-03.

CA-188-02: The draft permit includes a compliance activity requiring the permittee to prepare and implement a Quality Assurance Project Plan (QAPP) within six (6) months of permit issuance. The QAPP shall be designed to assist in planning for the collection, analysis, and reporting of all monitoring in support of the permit and in explaining data anomalies when they occur. Specific requirements of the QAPP are listed in the draft permit. The requirement for a QAPP is now standard for all reuse permits.

CA-188-03: The draft permit includes a compliance activity for the permittee to develop and implement a groundwater-monitoring plan by May 1, 2014. The Groundwater Characterization and Monitoring Plan prepared by Centra Engineering recommends a groundwater monitoring plan be implemented. The groundwater monitoring plan will need to be prepared by a licensed hydrogeologist or qualified professional engineer, and shall be designed to adequately determine whether recycled water practices are impacting groundwater.

CA-188-04: The draft permit includes a compliance activity requiring the permittee to prepare a nutrient management plan annually. Further discussion on this requirement is located in Section 4.2.3 below.

CA-188-05: The draft permit includes a compliance activity requiring the applicant to submit an

application for a waiver to Section 544.02.c of the Idaho Rules for Public Drinking Water Systems. Further discussion on this compliance activity is located in Section 4.2.1.

CA-188-06: The draft permit includes a compliance activity requiring the applicant to seepage test the storage lagoon by April 30, 2020 in accordance with the *Idaho Wastewater Rules*.

CA-188-07: The draft permit includes a compliance activity requiring the permittee to contact DEQ one year prior to permit expiration to set up a pre-application workshop to discuss future permit requirements.

CA-188-08: The draft permit includes a compliance activity requiring the permittee to submit a permit renewal application that fulfills the requirements specified at the pre-application workshop.

4.2 Permit Limits and Conditions – Section 4

4.2.1 Hydraulic Management Unit Descriptions

As discussed in Section 3 above, the areas listed in Permit LA-000188-02 for the Class B irrigation sites (HMUs – 6, 7, and 8) are incorrect. The draft permit will include the correct acreage for the Class B sites as shown in Table 1 above. BRU has requested two additional MUs (MU-4A, and MU-4B), which make up the Club at Black Rock golf course driving range, be added in this permit to allow irrigation of Class B effluent. These MUs were included in the original permit (LA-000188-01) however they were not included in permit LA-000188-02. There is currently no infrastructure in place to transmit Class B effluent to the proposed sites. The Club at Black Rock's drinking water reservoirs are located on the southern edge of the proposed MUs. Unfortunately the proposed MUs would conflict with the *Idaho Rules for Public Drinking Water Systems*, Section 544.02.c, which requires finished water storage reservoirs to be located at least 500 feet from land which is spray irrigated with wastewater. Therefore, proposed MUs 4A and 4B will not be included in the draft permit.

During the permitting process, it was discovered that two domestic water wells serving the Estates at Black Rock are located within the 1,000-foot buffer zone of MU-07 and MU-08. The wells are approximately 400 feet from the closest MU. The water system is currently non-public due to the number of connections; however, at full build out, the water system will serve 24 lots and be public. The permittee has completed the Well Location Acceptability Analysis as discussed in Section 6.6.4 of the *Reuse Guidance*, and information has been provided to show the well site is acceptable per Figure 6-2 of the *Reuse Guidance* (*See Appendix D*). Nitrate sample results included in the justification were taken in 2005 and 2007, and may have been taken prior to irrigation of the Class B sites. The Acceptability Analysis is acceptable to DEQ, however, to demonstrate no impacts to the well, the draft permit will include a requirement for the permittee to monitor nitrates in the Estates at Black Rock primary drinking water well. Monitoring of the domestic well should be completed annually at the end of irrigation season (October) to determine if irrigation activities are impacting the public drinking water system well. The buffer zones for MU-07 and MU-08 will be reduced to 400 feet as long as BRU can demonstrate that no impacts to the well are occurring.

In addition to the wells, the Estates at Black Rock reservoir also does not meet the setback location of 500 feet from land that is spray irrigated with wastewater per Section 544.02.c of the *Idaho Rules for Public Drinking Water Systems*. The reservoir is located adjacent to the Estates at Black Rock Well 2

(See Figure 2.2 in Appendix C) and is approximately 350 feet from MU-07 and 400 feet from MU-08. Plans for the reservoir were approved by DEQ in 2007 and irrigation of the golf course MUs began in 2009. The draft permit will include a compliance activity requiring the permittee to apply for a waiver from Section 544.02 of the *Idaho Rules for Public Drinking Water Systems* to allow for continued irrigation of the MUs in question.

4.2.2 Hydraulic Loading Limits, Vegetation, and Grazing

Hydraulic loading rates (HLRs) for various crops are generally determined by precipitation deficit (irrigation water requirement) information obtained from the University of Idaho’s ETIdaho website (<http://data.kimberly.uidaho.edu/ETIdaho/>) and incorporate the irrigation efficiencies listed in the *Idaho Guidance for Reclamation and Reuse of Municipal and Industrial Wastewater* (Reuse Guidance). The HLRs listed Permit LA-000188-02 do not match the data from the ETIdaho website for the Coeur d’Alene station for the respective crops. The permittee has requested the hydraulic loading limits be updated to reflect values shown on ETIdaho because it will result in a net increase in irrigation water allowed at each irrigation site. The renewal permit will require irrigation of each to be substantially equal to the irrigation water requirement (IWR) for the respective crops. The IWR for each crop should be calculated using average precipitation deficits listed on the ETIdaho site for the respective crops divided by the irrigation efficiency values as listed in the Reuse Guidance Manual. The irrigation efficiencies (E_i) have been estimated using the Table 4-12 of the Reuse Guidance. The E_i used for the purposes of estimating IWR in this staff analysis are: surface drip – 90%, handset line – 75%, underground commercial irrigation system – 80%. IWR values for poplar trees (third year and older), grass pasture – low maintenance, and turf grass – irrigated are shown on Table 2 below and in Figures 1-3 in Appendix A.

Table 2: Average Irrigation Water Requirements by Crop

Month	Poplar (3 years and older)		Pasture Grass - Low Maintenance		Grass Turf - irrigated	
	P_{def}^1 (in/month)	IWR ² (in/month)	P_{def}^1 (in/month)	IWR ³ (in/month)	P_{def}^1 (in/month)	IWR ⁴ (in/month)
May	2.53	2.81	2.94	3.92	3.43	4.29
June	5.70	6.33	3.54	4.72	4.26	5.33
July	8.53	9.48	5.55	7.40	6.65	8.31
August	7.41	8.23	4.69	6.25	5.53	6.91
September	4.35	4.83	2.75	3.67	3.66	4.58
October	1.24	1.38	0.46	0.61	1.24	1.55

1 Data calculated (ETIdaho data in mm/day / 25.4 in/mm * #days/month)
 2 IWR calculated (P_{def}/E_i) where $E_i=0.90$ from Idaho Reuse Guidance Manual
 3 IWR calculated (P_{def}/E_i) where $E_i=0.75$ from Idaho Reuse Guidance Manual
 4 IWR calculated (P_{def}/E_i) where $E_i=0.80$ from Idaho Reuse Guidance Manual

4.2.3 Constituent Loading Limits

Permit LA-000188-02 includes nitrogen-loading limits of 150 pounds/acre-year regardless of the type of crop being grown. Because tissue samples have not been required in the past nor proposed in the draft permit, typical crop uptake data for each site is not known. The draft permit will require the permittee to establish crop nutrient loading limits based on published information, such as that found through the University of Idaho Agricultural Extension Fertilizer Guides, and apply substantially at those loading

rates. Table 3 below includes typical ranges of nutrient uptake by the crops grown at the Black Rock recycled water irrigation sites.

Table 3: Typical Nutrient Uptake by Crop

Crop	Annual N Loading (lbs/acre-yr)	Annual P Loading (lbs/acre-yr)
Poplar	>350 ¹	3-62 ²
Turf Grass ³	120-150	0-50
Pasture Grass ³	140-170	0-50

1. St. John, Loren. *Hybrid Poplar: An Alternative Crop for the Intermountain Northwest*. USDA-NRCS. January 2001
 2. Data from: Neal, Amy Elizabeth Long. Poplar Data from *Utilizing Hybrid Poplar Trees to Phytoremediate Soils with Excess Phosphorus*. Web. 2005
 3. Turf and Pasture data from University of Idaho Agriculture Extension Fertilizer Guides

Tables 6 and 7 in Appendix B show that nutrient loading from recycled water is very low compared to the permitted limits (150 lb/acre). There is, however, the potential for nutrients to be over-applied through a combination of irrigation of recycled water and inorganic fertilizer application at the Class B sites. The draft permit will include a compliance activity requiring the permittee to provide the Rock Creek Club of Idaho a nutrient balance estimating anticipated flows and nutrient loading from recycled water to the Class B site and recommending inorganic fertilizer application rates for the site. The nutrient balance will require the permittee to predict future annual flows and nutrient loading based on historical data. The nutrient balance shall be submitted to the Rock Creek Club of Idaho annually, prior to irrigation season. BRU’s annual report must also include a copy of the nutrient balance provided to the Rock Creek Club of Idaho.

4.2.4 Hydraulic Management Unit Buffer Zones, Fencing, and Posting

Buffer zones at the Class C and Class B sites will remain the same as the current permit, however the draft permit will require signage around the Class B irrigation ponds at points of public access. Wording should read in accordance with Class B requirements in the *Recycled Water Rules*.

4.2.5 Other Permit Conditions

BRU’s treatment and reuse facilities are permitted for both Class B and Class C uses. Refer to Section 601 of the *Recycled Water Rules* for the municipal classification criteria. Consequently, the disinfection standard for Class C reuse, and turbidity and disinfection standards for Class B have been incorporated into the renewal permit. Permit LA-000188-02 includes outdated turbidity limits of 2.0 NTU arithmetic mean of daily samples, and a maximum turbidity of 5 NTU. The turbidity limits were increased for Class B treatment systems in the 2011 update to the *Recycled Water Rules* to a daily mean of 5.0 NTU and a maximum of 10 NTU. The renewal permit will be updated to reflect current turbidity requirements for Class B reuse.

4.3 Monitoring and Reporting – Sections 5 & 6

4.3.1 Constituent Monitoring

Generally, the facility is required to monitor the volumes of wastewater and supplemental irrigation water applied on the land application sites on a daily basis. Average monthly hydraulic loading rates of

recycled water to the various MUs are shown in the figures in Appendix A. Irrigation is generally done far below the hydraulic loading limits of the current permit (*see Figures 1-3 in Appendix A*). In 2012, excessive algae in the storage lagoon prevented BRU from producing Class B effluent. BRU was approved by DEQ to apply Class C effluent to the permitted Class C sites above their permitted HLR, but at the precipitation deficit (P_{def}) determined through the ETIdaho website.

Wastewater nutrient (total nitrogen and total phosphorus) sampling is required in the current permit in July and September during the first and last year of the permit (2010 and 2014 respectively) only. Black Rock Utilities has typically collected monthly total N and P samples monthly during the irrigation season regardless of the less frequent requirement listed in the permit. Results from annual nutrient loading at each site are shown on the tables in Appendix B. Wastewater monitoring parameters from the previous permit will be updated in draft renewal permit to include annual total Kjeldahl nitrogen (TKN) as well as nitrate+nitrite nitrogen in the months of July and September only. Annual total phosphorus sampling during July and September will also be included in the draft permit due to the close proximity to Lake Coeur d'Alene.

As discussed above, turbidity limits in the draft permit have increased from the current permit due to an update to the *Recycled Water Rules* in 2011. The current permit requires turbidity compliance to be met following chlorination, however this sampling is not in conformance with the *Recycled Water Rules*, which require turbidity monitoring to take place prior to chlorination. The draft permit will include a requirement for continuous turbidity monitoring of each filtration train at a point prior to chlorination. DEQ has generally accepted "continuous" monitoring as one turbidity reading every five minutes.

Coliform sampling on the weekends can be difficult because analytical labs are not open for business on the weekends. The *Recycled Water Rules* does provide DEQ the flexibility to allow a sampling frequency alternative to daily sampling based upon volumes of recycled water used and disinfection practices. Class B effluent is pumped approximately two miles to an irrigation pond where it is mixed with supplemental irrigation water pumped from the lake. Section 4.3.4 provides more detail on the volumes of recycled water and volumes of lake water that may be in the pond. In general, the volume of Class B effluent is much lower than the volume of lake water in the pond. The additional two miles of pipeline also provides further chlorine contact beyond the dedicated chlorine contact chamber. Because of the dilution occurring in the irrigation pond, and the additional chlorine contact time, the draft permit will require coliform monitoring daily, Monday through Friday only, during Class B irrigation.

The current permit requires BRU to monitor discharge through the lagoon underdrains and sample for nitrates and E.coli in the event of a significant discharge. The underdrains have not yet had a significant discharge that would require sampling. In addition, the lagoons were seepage tested in 2010 and found to be leaking at a rate less than allowed per the *Idaho Wastewater Rules*. The draft permit will eliminate the underdrain discharge monitoring as the lagoon has been determined to be in compliance with the rules.

4.3.2 Management Unit Flow Monitoring

Flow to the irrigation sites is monitored at the wastewater treatment facility as it leaves the treatment facility. The current permit requires monitoring of the recycled water going to all of the irrigation sites only. The draft permit will require the permittee to monitor supplemental irrigation flows as well.

4.3.3 Groundwater Monitoring

The permittee is not required to conduct ground water monitoring in the current permit. A groundwater impact analysis was completed as a compliance activity in permit LA-000188-02. The report concluded that groundwater impacts from the recycled water would be negligible due to the small fraction of hydraulic and nutrient loading by irrigation with effluent in comparison to the hydraulic and nutrient uptake of the vegetation. The report recommended that a groundwater-monitoring program be implemented to monitor effects to groundwater. Therefore, the draft permit will include a compliance activity requiring the applicant to implement a groundwater-monitoring program.

4.3.4 Lagoon Information

As discussed above, the existing 17-MG storage lagoon was seepage tested in 2010 and will be required to test again until 2020. The draft permit will include a compliance activity requiring the permittee to test the lagoon by April 30, 2020.

An irrigation pond is located between MU-6 and MU-8 at the Rock Creek Club of Idaho golf course. Treated and disinfected Class B effluent is pumped from the WWTF to the upper irrigation pond. Lake water is also pumped from Lake Coeur d'Alene into the pond and makes up the majority of the water in the ponds. Irrigation water from the upper pond overflows through a water feature to the lower lagoon located to the north.

Because the irrigation pond at the Rock Creek Club of Idaho golf course contains both recycled water and lake water, it falls under the definition of a lagoon. However, the amount of Class B effluent that is produced by Black Rock is generally a small portion of the total amount of water used for irrigating the golf course; lake water makes up the supplemental irrigation water used on the course. Class B effluent is only sent to the irrigation pond during the irrigation season and is used more as a staging area for the irrigation water rather than for long-term storage.

Table 4: Recycled and Supplemental Irrigation Water Flows

Month	2010 WWRU Flows (MG)	2011 WWRU Flows (MG)	2012 WWRU Flows (MG)	2012 Lake Water Flow (MG)
May	0.04	0	0	0
June	0.57	0.07	0	13.95
July	5.21	1.029	0.67	15.32
August	5.31	2.94	3.49	14.71
September	2.74	2.4	2.45	0
October	0.53	0.023	0.95	0
Total	14.40	6.46	7.56	43.98

Black Rock Utilities staff began collecting supplemental irrigational flow data from the lake pumps in 2012. No flow data from the lake pumps prior to 2012 is available. Table 4 below shows total recycled water flows from 2010 through 2012 as well as the supplemental irrigation flows for the Rock Creek Club golf course in 2012. No Class B effluent was irrigated at the golf course in 2012. It is assumed for the purposes of this justification that the supplemental irrigation flows listed in Table 4 (Lake Water Flow) represent the typical total irrigation water use at the Rock Creek Club golf course.

Table 5 shows estimated total nitrogen concentrations of the irrigation ponds if all of Black Rock’s recycled water had been used for Class B irrigation of the Rock Creek Club golf course in 2010 through 2012. Assumptions used in constructing this table include all of BRU’s recycled water being pumped into the irrigation ponds, and the irrigation flows from the lake in 2012 being typical irrigation water use for the MUs. The total Nitrogen concentration for the lake water is estimated using data from the Lake Management Plan Report for 2010. Total nitrogen concentrations in the lake in 2010 ranged from 65 µg/L to 168 µg/L. The 0.168 mg/L (168 µg/L) figure represents a more conservative concentration for the purposes of this Table. Even with the conservative estimates, the nitrogen concentrations in the ponds are well below the Groundwater Quality Standards of 10 mg/L.

Table 5: Estimated TN in Irrigation Pond by Year

Year	Recycled Water TN (mg/L)	Recycled Water (MG)	Lake Nitrogen ¹ (mg/L)	Lake Water ² (MG)	Total Irrigation Water (MG)	Average Nitrogen ³ (mg/L)
2010	1.49	14.40	0.168	29.60	44.00	0.60
2011	3.05	6.46	0.168	37.54	44.00	0.59
2012	1.64	7.56	0.168	36.44	44.00	0.42

¹ Lake Total Nitrogen values in 2010 ranged from 60-168 µg/L. 168 µg/L (.168 mg/L) chosen as a conservative figure.
² Lake Water = Total Irrigation – Recycled Water based on the assumption that actual irrigation water from the lake recorded in 2012 (44MG) represents typical irrigation of the MUs
³ Average Nitrogen calculated by following equation: (WWRU TN*Recycled Water + Lake N*Lake Water)/Total Irrigation

Because of the low ratio of recycled water to lake water in the irrigation pond, the low nitrogen concentrations in the wastewater and combined irrigation water, as well as the operation of the irrigation ponds only during irrigation season, a Compliance Activity for seepage testing the irrigation pond will not be included in this permit.

4.3.5 Other Monitoring Requirements

Other monitoring requirements include monthly updates of the number of ERUs connected to the wastewater system, and monthly estimates of storage lagoon volumes. The draft permit will eliminate these monitoring requirements as these monitoring activities would be more appropriately addressed in the updated O&M manual.

Crop tissue analyses have not been required for any of the crops grown at the Class B and Class C sites because there is no way to quantify the crop yields. Crop tissue analysis will not be incorporated into this permit.

4.3.6 Reporting

The permittee is required to submit an annual report that includes 1) all monitoring conducted under the terms of the permit, 2) the status of compliance activities required by the permit, and 3) an interpretive discussion of the monitoring data with particular respect to any potential environmental impacts. The annual report is due by January 31st of each year, and should address operations conducted from January 1 through December 31 of the preceding year.

Because the crops grown by BRU are not harvested, the draft permit does not contain any requirements for crop yield reporting.

5. **RECOMMENDATIONS**

Based on review of applicable state rules, staff recommends that DEQ issue draft WRP No. M-183-03 for a public review and comment period. The draft permit contains effluent quality requirements for the wastewater treatment system, as well as terms and conditions required for operation of the reuse system. Monitoring and reporting requirements to evaluate system performance and to determine permit compliance have been specified, and compliance activities have been incorporated into Section 4 of the permit.

6. **REFERENCES**

DEQ. Staff Analysis Black Rock Utilities. 2009.

Guidance for Reclamation and Reuse of Municipal and Industrial Wastewater, Idaho Department of Environmental Quality, September 2007

ETIdaho 2012 – Evapotranspiration and Consumptive Irrigation Water Requirements for Idaho, University of Idaho – Kimberly Research and Extension Center, Turf Grass, Poplar, and Grass Hay P_{def} data retrieved from <http://data.kimberly.uidaho.edu/ETIdaho/stninfo.py?station=101956> on April 10, 2013

Black Rock Utilities, Annual Reuse Permit Reports 2009-2012

Dittman, Drew. *Black Rock Utilities, Inc. Reuse Permit Renewal Technical Report*. Lake City Engineering. December 20, 2012.

Ariss, Chas & Wittman, Greg. *Groundwater Characterization and Monitoring Plan*. Centra Consulting. July 22, 2010.

St. John, Loren. *Hybrid Poplar: An Alternative Crop for the Intermountain Northwest*. USDA-NRCS. January 2001

Neal, Amy Elizabeth Long. *Poplar Data from Utilizing Hybrid Poplar Trees to Phytoremediate Soils with Excess Phosphorus*. 2005. Web.

University of Idaho Agriculture Extension. *North Idaho Fertilizer Guides*.

Appendix A:

Hydraulic Loading at the Irrigation Sites

Figure 1:

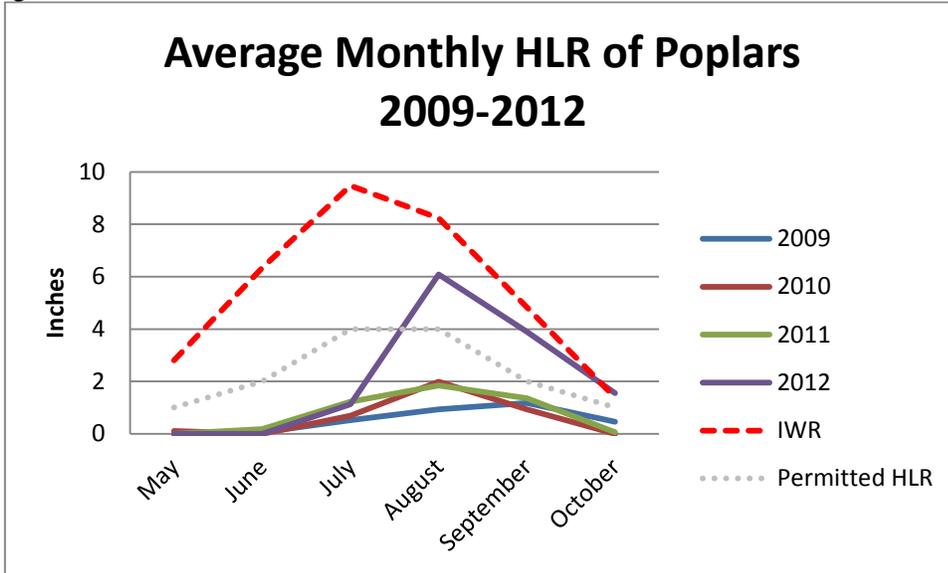


Figure 2:

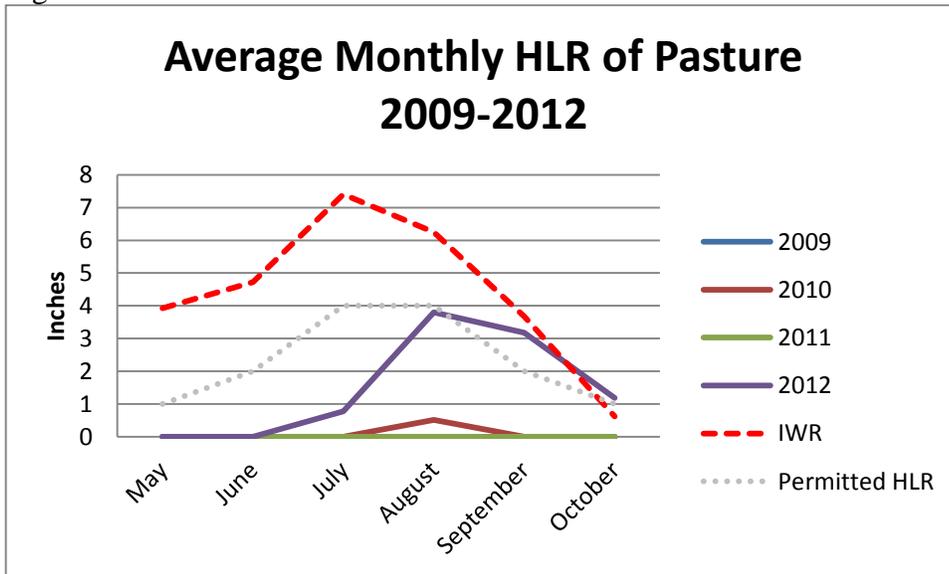
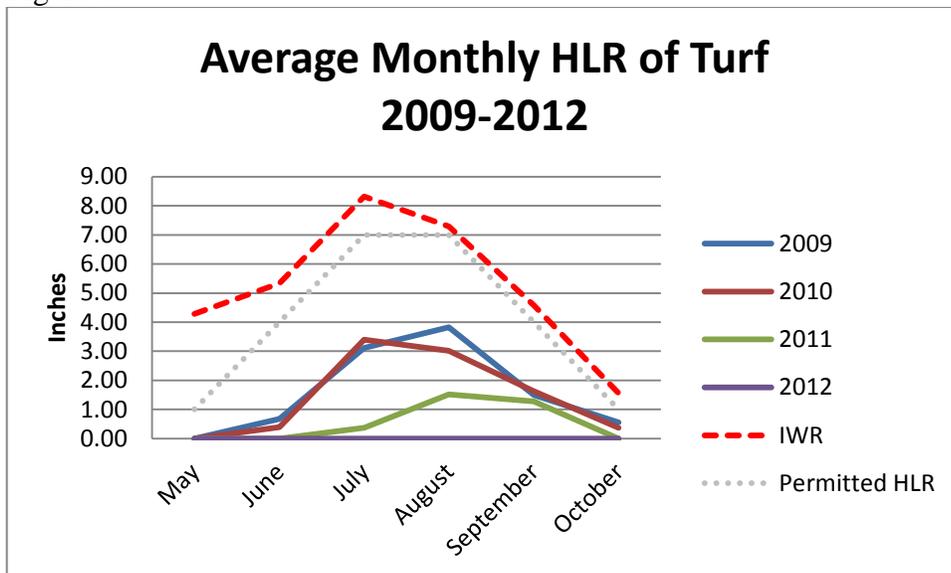


Figure 3:



Appendix B:

Nutrient Loading at Irrigation Sites

Table 6: 2009-2012 Nitrogen Loading by HMU

HMU	2009			2010			2011			2012		
	RW N Loading	Inorganic Fertilizer N	Total N	RW N Loading	Inorganic Fertilizer N	Total N	RW N Loading	Inorganic Fertilizer N	Total N	RW N Loading	Inorganic Fertilizer N	Total N
	(lbs.N/ac-yr)											
MU-1A	1.2	0	1.2	1.2	0	1.2	3.2	0	3.2	4.37	0	4.37
MU-1B	1.2	0	1.2	1.2	0	1.2	3.2	0	3.2	3.92	0	3.92
MU-1C	1.2	0	1.2	1.2	0	1.2	3.2	0	3.2	4.29	0	4.29
MU-2A	0	0	0	0.2	0	0.2	0	0	0	3.23	0	3.23
MU-2B	0	0	0	0.2	0	0.2	0	0	0	3.23	0	3.23
MU-06	7	0	7	4.1	87.1	91.2	3.2	153	156.2	0	N/A	N/A
MU-07	0.8	0	0.8	4.1	87.1	91.2	3.2	153	156.2	0	N/A	N/A
MU-08	1.1	0	1.1	0.4	87.1	87.5	0	153	153	0	N/A	N/A

Table 7: 2009-2012 Phosphorus Loading by HMU

HMU	2009			2010			2011			2012		
	RW P Loading	Inorganic Fertilizer P	Total P	RW P Loading	Inorganic Fertilizer P	Total P	RW P Loading	Inorganic Fertilizer P	Total P	RW P Loading	Inorganic Fertilizer P	Total P
	(lbs.N/ac-yr)											
MU-1A	1.2	0	1.2	1.2	0	1.2	1.9	0	1.9	5.12	0	5.12
MU-1B	1.2	0	1.2	1.2	0	1.2	1.9	0	1.9	4.78	0	4.78
MU-1C	1.2	0	1.2	1.2	0	1.2	1.9	0	1.9	5.09	0	5.09
MU-2A	0	0	0	0.2	0	0.2	0	0	0	3.84	0	3.84
MU-2B	0	0	0	0.2	0	0.2	0	0	0	3.84	0	3.84
MU-06	7	0	7	3.9	N/A	3.9	1.9	N/A	1.9	0	N/A	N/A
MU-07	0.8	0	0.8	3.9	N/A	3.9	1.9	N/A	1.9	0	N/A	N/A
MU-08	1.1	0	1.1	0.4	N/A	0.4	0	N/A	0	0	N/A	N/A

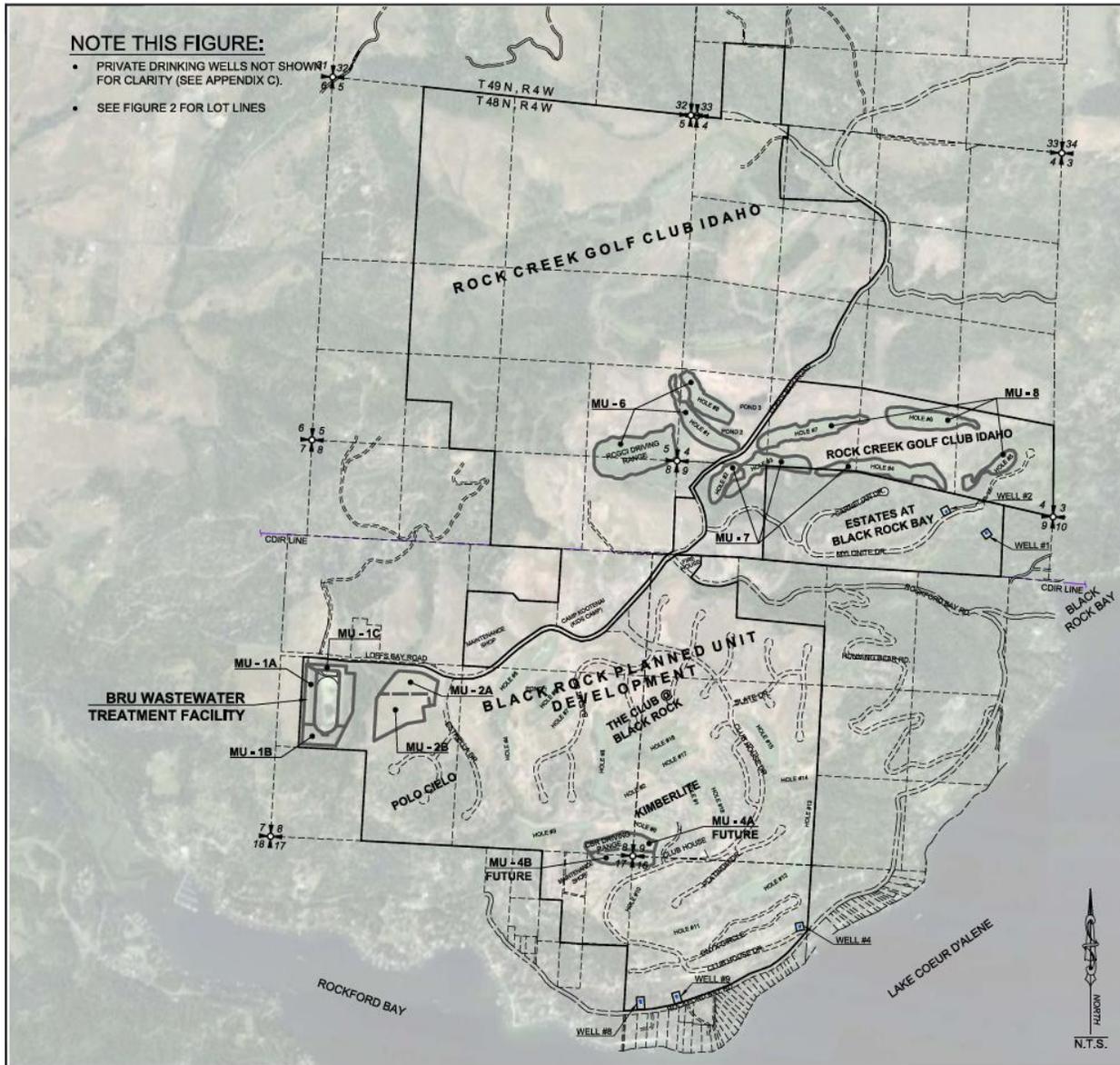
Appendix C:

Facility Maps

(Prepared by Lake City Engineering)

NOTE THIS FIGURE:

- PRIVATE DRINKING WELLS NOT SHOWN FOR CLARITY (SEE APPENDIX C).
- SEE FIGURE 2 FOR LOT LINES



LEGEND:

- PROJECT BOUNDARY
- REUSE FACILITIES
- PUBLIC DRINKING WATER SUPPLY
- CDIR LINE
- COEUR D'ALENE INDIAN RESERVATION BOUNDARY LINE

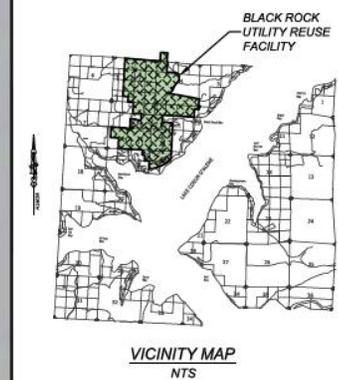
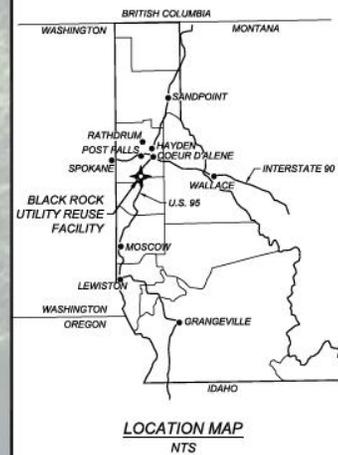


FIGURE 1

BLACK ROCK PLANNED UNIT DEVELOPMENT & ROCK CREEK GOLF COURSE IDAHO

VICINITY MAP
KOOTENAI COUNTY, IDAHO

DESIGNED BY:	
DRAFTED BY:	SMA
DATE:	1/9/2013
JOB NO:	LCE 12-056
SCALE:	N.T.S.

Not To Scale



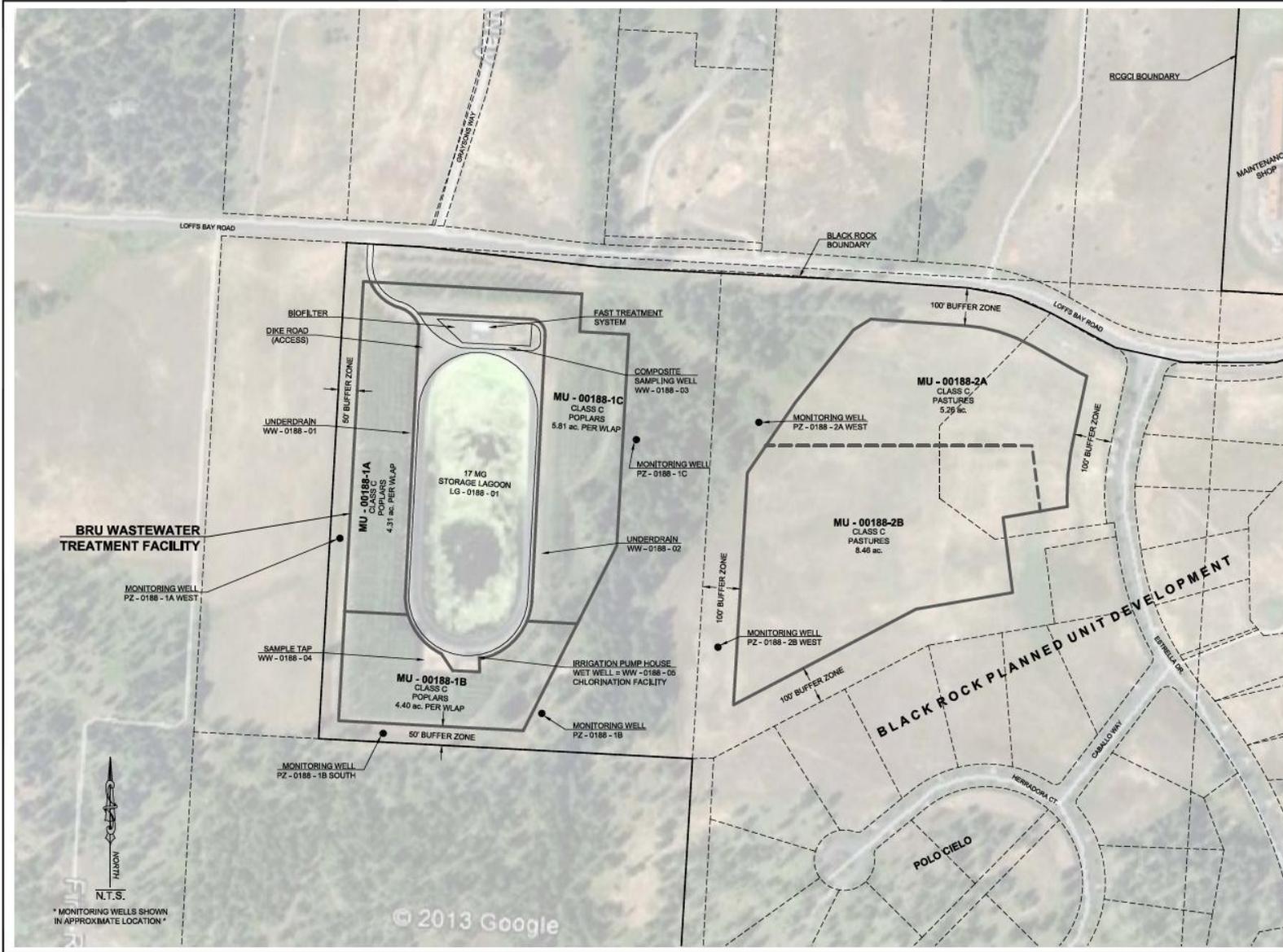


FIGURE 2.1

BLACK ROCK PLANNED UNIT DEVELOPMENT & ROCK CREEK GOLF COURSE IDAHO
 REUSE FACILITY & CLASS C HMU MAP
 KOOTENAI COUNTY, IDAHO

DESIGNED BY:	
DRAFTED BY:	SMA
DATE:	1/14/2013
JOB NO:	LCE 12-056
SCALE:	N.T.S.
Not To Scale	

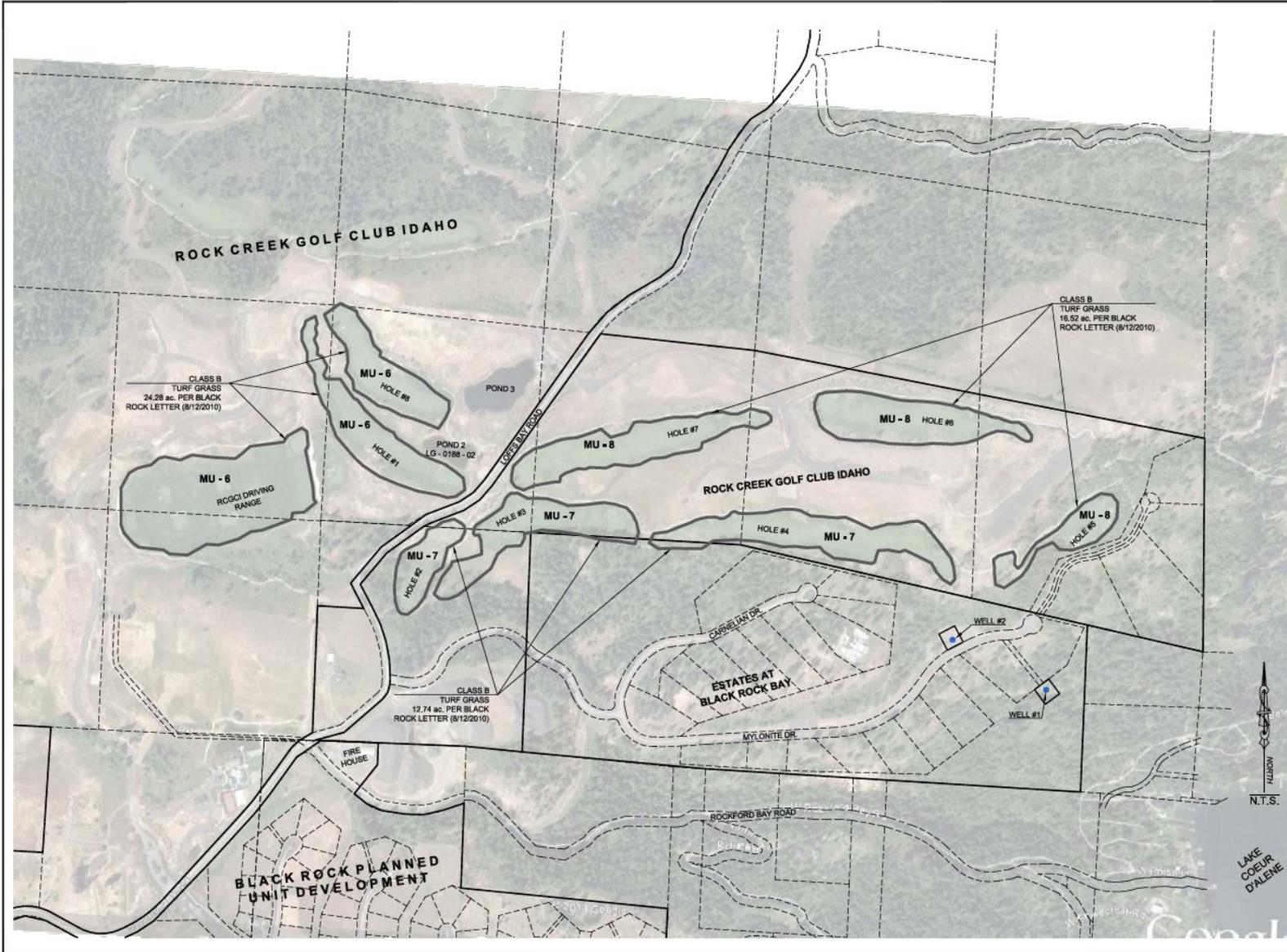


FIGURE 2.2

BLACK ROCK PLANNED UNIT DEVELOPMENT & ROCK CREEK GOLF COURSE IDAHO

CLASS B HIMU MAP
KOOTENAI COUNTY, IDAHO

DESIGNED BY:	
DRAFTED BY:	SMA
DATE:	1/14/2013
JOB NO:	LCE 12-056
SCALE:	N.T.S.
Not To Scale	
10	

Appendix D:

Well Site Acceptability Analysis

March 26, 2013

State of Idaho Department of Environmental Quality
2110 Ironwood Parkway
Coeur d'Alene, Idaho 83814

ATTN: Matt Plaisted, P.E.

RE: Black Rock Utilities, Inc., Wastewater Reuse Permit Renewal
LA-000188-02



Dear Matt:

This letter is our response to your February 28, 2013 email with questions regarding the above-referenced project. A copy of your email is attached hereto.

Response to Comment #1

The well in question belongs to the Club at Black Rock maintenance facility. Based on conversations with BRU operators, it is actually located approximately 200 feet to the south of the location shown in the IDWR Well Map; however, it still falls within the 500' buffer area. Originally, this well was believed to provide irrigation water only. It now appears this well provides domestic and irrigation water to the maintenance shop. Since the maintenance shop falls within the BRU service area, BRU will begin steps to remove the domestic water connection from the well and re-connect the facility to the BRU domestic water system. It is our understanding that the well will remain as an irrigation well only. Our recommendation is this is handled as a Compliance Activity item where BRU provides documentation certifying that the domestic water service is connected to the BRU Potable Water System before the Black Rock Driving range HMU is ever utilized.

Response to Comment #2

Per Section 6.6.4., of the *Guidance for Reclamation and Reuse of Municipal and Industrial Wastewater Operations* (Guidance) the 500-foot and 1000-foot buffer zones between a wastewater land treatment site and domestic and municipal wells "are general recommendations and may not be appropriate in all circumstances." Recent field investigations suggest that the primary and back-up wells currently serving The Estates at Black Rock (EBR) are within MU-07's Fairway #4 and MU-08's Fairway #5 buffer zones. These management unit areas are currently permitted under Black Rock Utilities' (BRU) Reuse Permit LA-000188-02 as Rock Creek Golf Club Idaho (RCGCI) Class B Recycled Wastewater Application Areas. According to the Guidance, a Well Location Acceptability Analysis (WLAA) can be used to determine the suitability of a well's locations with respect to Wastewater land treatment areas. Referring to Guidance Figure 6-2, the following provides a brief discussion of the methodologies of the WLAA employed in determining the suitability EBR's wells with respect to BRU's Class B Land Application Areas:



1. Both wells are closer than ¼ mile (1,320 feet) to the MU areas previously described.
2. Both wells are greater than 50 feet from the said MU areas.
3. Per the Lithologic Log found in IDWR Well Driller's Report #846997, the primary well first encountered water at a depth of 195 feet above a broken basalt and clay layer before hitting water again at 420 feet. Per the Lithologic Log in IDWR Well Driller's Report 825783, the backup well first encountered water at a depth of 162 feet which is above a broken basalt layer too. This layer is approximately 150 feet above this well's completed depth of 320 feet. This may suggest that both well's source water is drawn from a hydraulically isolated lower aquifer and would be acceptable locations per the WLAA. However, considering the basalt layer in both reports was defined as "broken", a conservative approach would not define these as hydraulically isolated lower aquifers and the WLAA evaluation to continue. Both Well Driller Reports are the best available information regarding these wells and are attached to this document.
4. According to the current Reuse Permit LA-000188-02, the wastewater land treatment system is defined as a municipal system. No industrial wastewater is discharged to the Wastewater Treatment Plant.
5. Both wells are greater than 100 feet from the said MU areas.
6. As permitted under the current reuse permit LA-000188-02, the said MU areas are designated for Class B Recycled Wastewater. Per Guidance 6.6.4.7., *"regulatory concerns for pathogen attenuation and distances are satisfied and concerns regarding hydraulic, nutrient and other constituent loading can be addressed as with non-municipal wastewaters."*
7. The wells are existing wells and have been tested routinely by BRU. See attached Water Quality Reports.
8. Comparing the attached Water Quality Reports to the GWQR in IDAPA 58.01.11, it appears the source water at these wells comply with the numerical Ground Water Quality Standards.

Based on the above information, it appears that both wells serving the EBR meet the criteria outlined in the Guidance's WLAA. We request IDEQ approve the wells as they presently stand today.

Response to Comment #3

Based on conversations with BRU, the grass clippings at the Club at Black Rock are bagged and removed offsite; however, the grass presently on the RCGCI golf course is of a different species with different maintenance requirements. The grass clippings on the RCGCI greens is currently collected and removed offsite; but the grass clippings on the fairways and rough areas are mulched and left on the ground. Based on this information, an adjusted Nutrient Loading Factor was estimated per the direction of IDEQ. The following provides a brief discussion of our findings with respect to BRU's Class B Wastewater Land Treatment (Application) Areas.



According to an article provided by IDEQ, typical values of grass clippings Nitrogen (N) available for plant consumption range from 20 to 30 percent¹. Assuming a 25 percent increase in nitrogen loading as a result of leaving the grass clippings on the Class B HMUs, the calculated 3-year average nitrogen loading could increase from 4.8 lbs. N/ac/yr to nearly 6.0 lbs. N/ac/yr. This assumes the grass clipping's decomposition and mineralization of the Nitrogen (N) is relatively rapid. The calculated increase in nitrogen is minimal but still contributes to the total nitrogen loading rate at the reuse facility and will require adjustments to the supplemental fertilizer loading rates. It should be noted that no Class B Recycled Wastewater was pumped to MU-06, 07 and 08 during 2012.

Thank you. Should you have any questions regarding the above, please call.

Best Regards,

Michael L. Becker, E.I.T.
Project Engineer



Drew C. Dittman, P.E.
Principal

CC: Craig Harlen, BRU
Rich Agueros, System Operator United Crown Pump

Encl: DEQ Email
Well Location Acceptability Analysis Chart, IDEQ Guidance
Well Drillers Logs
Groundwater Analysis Reports

¹Kopp, Kelly L. and Guillard, Karl, "Quantifying Turf grass – Available N from Returned Clippings Using Anion-Exchange Membranes." (2009) Plant Science Article Paper 26.

Mike Becker

From: Matthew.Plaisted@deq.idaho.gov
Sent: Thursday, February 28, 2013 11:36 AM
To: becker@lakecityengineering.com
Subject: FW: Black Rock Permit M-188-03 - Renewal Application Completeness Determination

Mike and Craig,

I have reviewed the permit renewal application submitted on January 18, 2013. I have found it to be substantially complete, but there are a few items that need clarification:

1. The IDWR well locator map show a well nearby the proposed HMU at the Black Rock driving range (HMU-4A & 4B). Please verify the location and purpose for this well. If the well is used for domestic water, a buffer distance of 500 feet from private wells, or 1000 feet from public drinking water wells must be maintained.
2. The report needs to include a statement that all HMUs are 500 feet from private drinking water wells, and 1000 feet from public wells.
3. Include a discussion on the "cropping" practices at the Class B sites. For example: is grass mulched or removed from site. If mulched, a mineralization rate needs to be factored in when calculating nutrient loading.

If you should have any questions regarding these comments, please feel free to give me a call. A response to these comments via email is acceptable.

Thanks,

Matt Plaisted, P.E.
Environmental Engineer

Idaho Department of Environmental Quality
2110 Ironwood Parkway
Coeur d'Alene, ID 83814
Ph: 208-769-1422 Fax: 208-769-1404
Matthew.Plaisted@deq.idaho.gov

Guidance for Reclamation and Reuse of Municipal and Industrial Wastewater Operations
Page 6-28

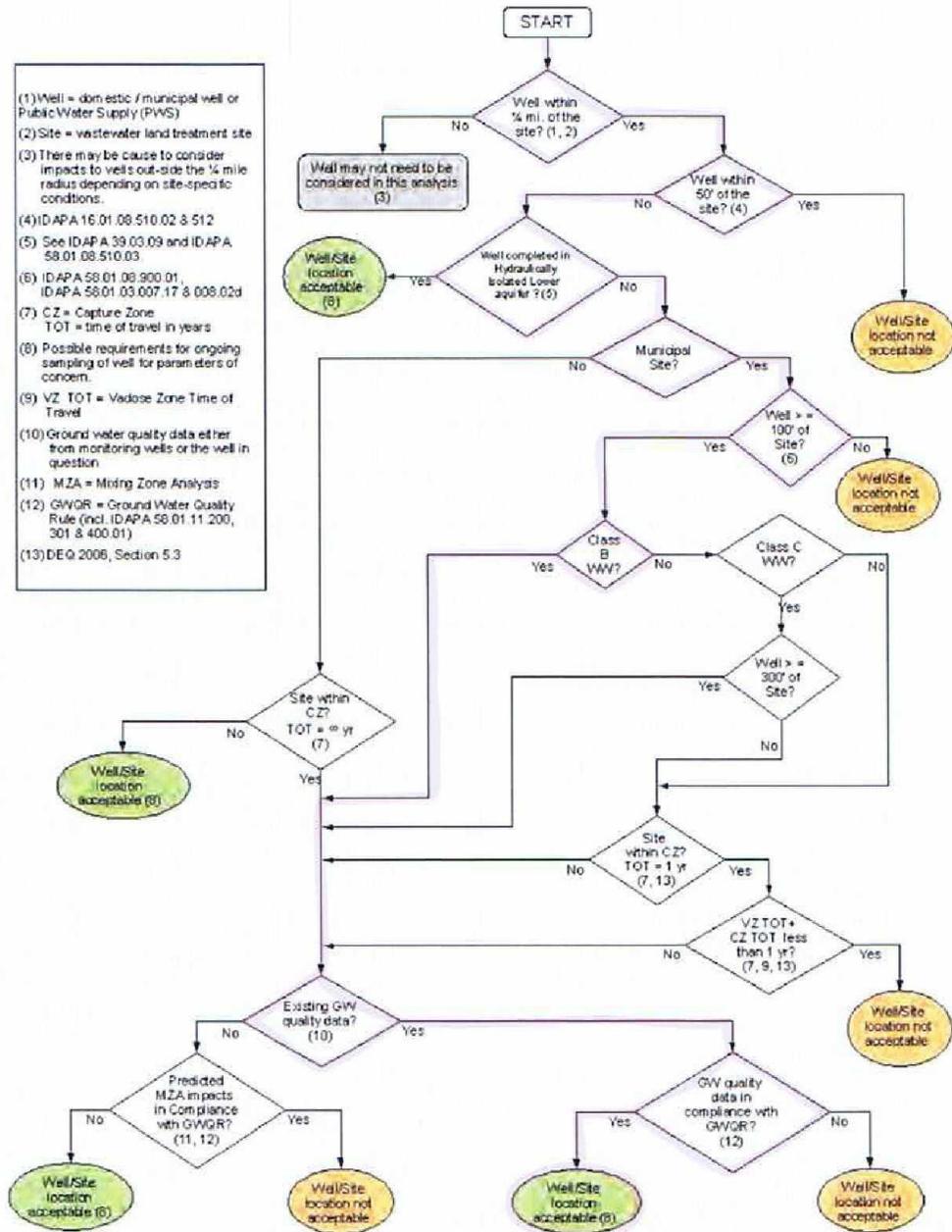


Figure 6-2. Well Location Acceptability Analysis.

EBR BACKUP WELL

Form 238-7
3/95-C96

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only #15

Inspected by _____

Twp _____ Rge _____ Sec _____

1/4 _____ 1/4 _____ 1/4 _____

Lat: _____ Long: _____

1. DRILLING PERMIT NO. 82-5-783
Other IDWR No. D 0039673

2. OWNER:
Name The Ridge at Black Rock Bay Homes
Address 10636 N. Government Way
City Hayden State ID Zip 83835

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location
N

W		Twp. <u>48</u> North <input checked="" type="checkbox"/> or South <input type="checkbox"/>
		Rge. <u>4</u> East <input type="checkbox"/> or West <input checked="" type="checkbox"/>
		Sec. <u>9</u> NE 1/4 <input checked="" type="checkbox"/> NE 1/4 <input type="checkbox"/>
		<small>10 acres 40 acres 160 acres</small>

Gov't lot _____ County Kootenai

Lat: _____ Long: _____

Address of Well Site Rockford Bay Road .5 mi
City Coeur d'Alene

(Give at least name of road + Distance to Road or Landmark)

Lt. _____ Blk. _____ Sub. Name _____

4. USE:
 Domestic Municipal Monitor Irrigation
 Thermal Injection Other

5. TYPE OF WORK check all that apply (Replacement etc.)
 New Well Modify Abandonment Other

6. DRILL METHOD
 Air Rotary Cable Mud Rotary Other

7. SEALING PROCEDURES

Material	SEAL/FILTER PACK		AMOUNT	METHOD
	From	To		
Bentonite	0	58	900#	dry granular

Was drive shoe used? Y N Shoe Depth(s) 158'
Was drive shoe seal tested? Y N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+2	158	280	Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4"	20	320	S 40	PVC	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

Perforations Method saw cut 1/8" x 6" slot
 Screens Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
300	320	1/8"	48	4"	PVC	<input type="checkbox"/>	<input checked="" type="checkbox"/>

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

102 ft. below ground Artesian Pressure _____ lb
Depth flow encountered _____ ft. Describe access port or control devices: _____

11. WELL TESTS:

Yield gal/min	Drawdown	Pumping Level	Time
42	16'	118	24 hrs

Water Temp. _____ Bottom hole temp. _____
Water Quality test or comments: Cold & clear
Depth first Water Encountered 162'

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temp.	Y	N
10"	0	12	Clay, tan		
	12	38	Clay, tan, sand, tan		
	38	49	Sand, clay tan, wet		
	49	58	Clay, brown		
8"	58	93	Clay, dark brown		
	93	138	Clay, grey		
	138	155	Clay, dark grey, basalt, broken		
	155	158	Basalt, grey, vesicular		
6"	158	173	Basalt, broken, 30 gpm		
	173	188	Basalt, grey, medium		
	188	196	Basalt, broken		
	196	245	Basalt, black, medium		
	245	292	Basalt, hard		
	292	307	Basalt, grey, medium 5gpm		
	307	315	Basalt, grey, broken 15 gpm		
	315	318	Basalt, broken, with clay		
	318	320	Clay, grey, soft, wet		

RECEIVED

Completed Depth: 320 (Measurable)
Date: Started 01/06/05 Completed 01/12/05

13. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name McCarty Drilling & Pump Inc Firm No. 586

Firm Official [Signature] Date 2-14-05

Supervisor or Operator _____ Date _____
(Sign once if Firm Official & Operator)

Date: 2/14/2005 Time: 10:52:12 AM

48N 4W 9

EBR PRIMARY WELL

38-7

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only		
Well ID No.	#16	
Inspected by		
Twp	Rge	Sec
1/4	1/4	1/4
Lat: : : Long: : :		

WELL TAG NO. D 0051994
 DRILLING PERMIT NO. 846997
 Water Right or Injection Well No. 95-9248



12. WELL TESTS:

Pump Bailor Air Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
100 GPM	100%	420 FT	2 Hours

2. OWNER:

Name Black Rock Development
 Address P.O. Box 3070
 City Coeur d' Alene State ID Zip 83816

3. LOCATION OF WELL by legal description:

You must provide address or Lot, Blk, Sub. or Directions to well.
 Twp. 48 North or South
 Rge. 4 East or West
 Sec. 9 1/4 NE 1/4 NE 1/4
 Gov't Lot _____
 County Kootenai
 Lat: : : Long: : :
 Address of Well Site Black Rock Road

City Coeur d' Alene
 Lt. _____ Blk. _____ Sub. Name "Estates at Black Rock Bay"

4. USE:

Domestic Municipal Monitor Irrigation
 Thermal Injection Other _____

5. TYPE OF WORK check all that apply (Replacement etc.)

New Well Modify Abandonment Other _____

6. DRILL METHOD:

Air Rotary Cable Mud Rotary Other _____

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
Bentonite	0	180	32 sack	Dry Pour

Was drive shoe used? Y N Shoe Depth(s) _____
 Was drive shoe seal tested? Y N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	+3	423	.28	Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe _____ Length of Tailpipe _____
 Packer Y N Type _____

9. PERFORATIONS/SCREENS PACKER TYPE

Perforation Method Torch Cut
 Screen Type & Method of Installation _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
383	423	1/2 x 12	80	6	Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

200 ft. below ground Artesian pressure _____ lb.
 Depth flow encountered 275 ft. Describe access port or control devices:
Steel Cap Welded

Water Temp. Cold Bottom hole temp. Cold

Water Quality test or comments: Cold, Clear, No Smell

Depth first Water Encounter 195

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
	12	0	2 Clay brown		X
	12	2	12 Basalt cobbles		X
	12	12	30 Clay brown firm		X
	12	30	50 Clay tan with sand		X
	12	50	58 Clay black with basalt		X
	8	58	70 Clay black with basalt		X
	8	70	185 Black basalt hard		X
	8	185	195 Basalt broken trace of clay	X	
	8	195	196 Sand quartz coarse		X
	8	196	203 Clay gray firm		X
	8	203	206 Clay green firm		X
	8	206	221 Clay green w/ gray basalt		X
	8	221	222 Sand quartz coarse		X
	8	222	258 Clay gray/brown firm		X
	8	258	420 Basalt black hard		X
			Water Bearing		
			Fractures:		
			275 FT		
			290 FT		
			340 FT		
	8	420	423 Clay brown hard		X
			- 6" x 8" Formation Packer set at 266 FT -		

RECEIVED
 JUL 03 2007
 IDWR/Noth

UNITED PUMP & DRILLING
 3125 W. Hayden Ave. Hayden, ID 83835
 Office (800) 682-9641 (208) 772-7867

Completed Depth 423 FT (Measurable)
 Date: Started 6-11-07 Completed 6-14-07

14. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name United Pump & Drilling Firm No. 636

Principal Driller Jason Beckham Date 6-14-07

and Driller or Operator [Signature] Date 6-14-07

Operator [Signature] Date _____

Principal Driller and Rig Operator Required 28/2013 6:23 PM

The Ridge at Bl

Well #1

Lab EPA ID No.: ID00912	Lab Sample #: 52962
Date Received: 02/11/2005	Date Reported by Lab: 02/22/2005
Compliance or Replacement Sample: Compliance	
Date Collected: 02/11/2005	Time Collected: 08:25:
Sample Type: Plant Tap	
PWS #	PWS Name: The Ridge at Blackrock Bay Homes
Sampling Location: New Well	Tag #
Collector's Name: Will	Phone: (208) 687-9170

Testing Labs, LLC

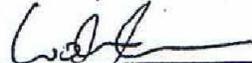
7950 Meadowlark Way
 Coeur d'Alene, ID 83815
 Phone (208) 762 8378
 Fax (208) 762 9082
 Web site: www accuratetesting.com
 E-mail: info@accuratetesting.com

Public Drinking Water System INORGANIC CHEMICAL (IOC) ANALYSIS REPORT:

Phase II								Phase V							
FRDS	Contaminant	RESULT*	MCL*	MDL*	Method	Analysis Date	Analyst	FRDS	Contaminant	RESULT*	MCL*	MDL*	Method	Analysis Date	Analyst
1010	Barium	ND	2.000	0.02	EPA 200.7	02/18/2005	WM	1036	Nickel	ND	0.10	0.02	EPA 200.7	02/18/2005	WM
1015	Cadmium	ND	0.005	.002	EPA 200.7	02/18/2005	WM	1074	Antimony	ND	0.006	.005	EPA 200.9	02/18/2005	WM
1020	Chromium	ND	0.100	0.01	EPA 200.7	02/18/2005	WM	1075	Beryllium	ND	0.004	.002	EPA 200.7	02/18/2005	WM
1035	Mercury	ND	0.002	.005	EPA 245.1	02/22/2005	WM	1085	Thallium	ND	0.002	.001	EPA 200.9	02/18/2005	WM
1038	TU (NO2/NO3)	ND	10.0	0.5	EPA 300.0	02/11/2005	WM	Other IOCs							
1040	Nitrate	ND	10.0	0.5	EPA 300.0	02/11/2005	WM	1005	Arsenic	ND	0.050	.004	EPA 200.9	02/18/2005	WM
1041	Nitrite	ND	1.0	0.5	EPA 300.0	02/11/2005	WM	1026	Fluoride	0.3	4.000	0.2	EPA 300.0	02/11/2005	WM
1045	Selenium	ND	0.050	.005	EPA 200.9	02/21/2005	WM	1052	Sodium	10.60		0.30	EPA 200.7	02/18/2005	WM
104	Cyanide														
Secondary IOCs (optional)															
1002	Aluminum							1055	Sulfate	11.2	250.0	1.50	EPA 300.0	02/11/2005	WM
1003	Ammonia							1095	Zinc						
1016	Calcium	21.63		0.1	EPA 200.7	02/16/2005	WM	1905	Color						
1017	Chloride							1915	Hardness						
1022	Copper							1920	Odor						
1027	Hyd. Sulfide							1925	pH	7.66			EPA 150.1	02/11/2005	WM
1028	Iron	1.12	0.30	0.02	EPA 200.7	02/16/2005	WM	1926	Conductivity						
1031	Magnesium							1927	Alkalinity	112.0		0.1	EPA 310.1	02/17/2005	WM
1032	Manganese	0.17	0.05	0.01	EPA 200.7	02/16/2005	WM	1930	Diss. Solids	169.0	500.0	1.00	EPA 150.1	02/18/2005	WM
1042	Potassium							1997	Langlier Indx	-0.728			Misc.	02/18/2005	WM
1049	Silica SiO2							2905	Surfactants						
1050	Silver							1030	Lead						

*Reported in mg/L unless otherwise noted, units differ for secondary MCLs depending on contaminant
 ND = Not detected within sensitivity of instrument
 Empty = No analysis performed for this contaminant
 ADL = Method detection limit
 ACL = Maximum Contaminant Level
 Comments:

McCarty Drilling & Pump, Inc.
 Brett McCarty
 0035 N. Memory Lane
 Rathdrum, ID 83858


 Lab Supervisor's Signature
 Walter Mueller

02/22/2005

ATI Order No. 0000000001

Lab EPA ID No.: ID00912	Lab Sample #: 52962
Date Received: 02/11/2005	Date Reported by Lab: 03/08/2005
Compliance or Replacement Sample: Compliance	
Date Collected: 02/11/2005	Time Collected: 08:25
Sample Type: Plant Tap	
PWS #	PWS Name: The Ridge at Blackrock Bay Homes
Sampling Location: New Well	Tag #
Collector's Name: Will	Phone: (208) 687-9170

ATL

Accurate Testing Labs, LLC

7950 Meadowlark Way
Coeur d'Alene, ID 83815

Phone (208) 762 8378

Fax (208) 762 9082

Web site: www accuratetesting.com

E-mail: info@accuratetesting.com

Public Drinking Water System VOLATILE ORGANIC (VOC) ANALYSIS REPORT:

Method: EPA 524.2

Analysis Date: 02/16/2005

Analyst: ANA

FRDS	Contaminant	RESULT*	MCL*	MDL*	FRDS	Contaminant	RESULT*	MCL*	MDL*
2378	1,2,4-Trichlorobenzene	ND	70.0	0.5	2979	trans-1,2-Dichloroethylene	ND	100.0	0.5
2380	cis-1,2-Dichloroethylene	ND	70.0	0.5	2980	1,2-Dichloroethane	ND	5.0	0.5
2950	Trihalomethanes-Total	ND	100.0	0.5	2981	1,1,1-Trichloroethane	ND	200.0	0.5
2943	Bromodichloromethane	ND		0.5	2982	Carbon Tetrachloride	ND	5.0	0.5
2942	Bromoform	ND		0.5	2983	1,2-Dichloropropane	ND	5.0	0.5
2941	Chloroform	ND		0.5	2984	Trichloroethylene	ND	5.0	0.5
14	Dibromochloromethane	ND		0.5	2985	1,1,2-Trichloroethane	ND	5.0	0.5
2955	Xylenes-Total	ND	1000	0.5	2987	Tetrachloroethylene	ND	5.0	0.5
2964	Dichloromethane	ND	5.0	0.5	2989	Monochlorobenzene	ND	100.0	0.5
2968	o-Dichlorobenzene	ND	600.0	0.5	2990	Benzene	ND	5.0	0.5
2969	p-Dichlorobenzene	ND	75.0	0.5	2991	Toluene	ND	1000	0.5
2976	Vinyl Chloride	ND	2.0	0.5	2992	Ethylbenzene	ND	700.0	0.5
2977	1,1-Dichloroethylene	ND	7.0	0.5	2996	Styrene	ND	100.0	0.5

*Reported in ug/L unless otherwise noted
 ND = Not detected within sensitivity of instrument
 Empty = No analysis performed for this contaminant
 MDL = Method detection limit
 MCL = Maximum Contaminant Level
 VOC: Sub_Lab: Anatek Labs, Inc.

Comments:

McCarty Drilling & Pump, Inc.
 Brett McCarty
 10035 N. Memory Lane
 Shoshone, ID 83858


 Lab Supervisor's Signature
 Walter Mueller
 03/08/2005 
 ATL Order No.: 2005020194 1

Lab EPA ID No.: ID00912	Lab Sample #: 52962
Date Received: 02/11/2005	Date Reported by Lab: 03/08/2005
Compliance or Replacement Sample: Compliance	
Date Collected: 02/11/2005	Time Collected: 08:25
Sample Type: Plant Tap	
PWS #	PWS Name: The Ridge at Blackrock Bay Homes
Sampling Location: New Well	Tag #
Collector's Name: Will	Phone: (208) 687-9170

ATL

Accurate Testing Labs, LLC

7950 Meadowlark Way
 Coeur d'Alene, ID 83815
 Phone (208) 762 8378
 Fax (208) 762 9082

Web site: www accuratetesting.com
 E-mail: info@accuratetesting.com

Public Drinking Water System SYNTHETIC ORGANIC (SOC) ANALYSIS REPORT:

FRDS	Contaminant	RESULT*	Method	MCL*	MDL*	Analysis Date	Analyst
2005	Endrin	ND	EPA 505	2.0	0.03	02/15/2005	ANA
2010	Lindane	ND	EPA 505	0.2	0.02	02/15/2005	ANA
2015	Methoxychlor	ND	EPA 505	40	0.1	02/15/2005	ANA
2020	Toxaphene	ND	EPA 505	3.0	1	02/15/2005	ANA
2031	Dalapon	ND	EPA 515.3	200	1.0	03/04/2005	ANA
2032	Diquat	ND	EPA 549.2	20	0.4	02/27/2005	ANA
2033	Endothall	ND	EPA 549.1	100	9	02/17/2005	ANA
2034	Glyphosate	ND	EPA 547	700	6	02/14/2005	ANA
2035	Di(2-ethylhexyl)adipate	ND	EPA 525.2	400	2.0	02/17/2005	ANA
2036	Oxamyl	ND	EPA 531.1	200	1	02/23/2005	ANA
2037	Simazine	ND	EPA 525.2	4.0	0.07	02/17/2005	ANA
2040	Picloram	ND	EPA 515.3	500	0.1	03/04/2005	ANA
2041	Dinoseb	ND	EPA 515.3	7	0.1	03/04/2005	ANA
2042	Hexachlorocyclopentadiene	ND	EPA 525.2	50	0.1	02/17/2005	ANA
2046	Carbofuran	ND	EPA 531.1	40	0.9	02/23/2005	ANA
2050	Atrazine	ND	EPA 525.2	3.0	0.1	02/17/2005	ANA
2051	Alachlor	ND	EPA 525.2	2.0	0.1	02/17/2005	ANA
2065	Heptachlor	ND	EPA 505	0.4	0.04	02/15/2005	ANA
2067	Heptachlor Epoxide	ND	EPA 505	0.2	0.02	02/15/2005	ANA
2105	2,4-D	ND	EPA 515.3	70	0.1	03/04/2005	ANA
2110	2,4,5-TP	ND	EPA 515.3	50	0.1	03/04/2005	ANA
2274	Hexachlorobenzene	ND	EPA 525.2	1.0	0.1	02/17/2005	ANA
2039	Di(2-ethylhexyl)phthalate	12.8	EPA 525.2	6	0.6	02/17/2005	ANA
2306	Benzo[a]pyrene	ND	EPA 525.2	0.2	0.02	02/17/2005	ANA
2326	Pentachlorophenol	ND	EPA 515.3	1	0.04	03/04/2005	ANA
2383	PCB's	ND	EPA 505	0.5	0.01	02/15/2005	ANA
2931	DBCP	ND	EPA 504.1	0.2	0.02	02/21/2005	ANA
2946	EDB	ND	EPA 504.1	0.05	0.01	02/21/2005	ANA
2959	Chlordane	ND	EPA 505	2.0	0.10	02/15/2005	ANA

*Reported in ug/L unless otherwise noted
 ND = Not detected within sensitivity of instrument
 Empty = No analysis performed for this contaminant
 MDL = Method detection limit
 MCL = Maximum Contaminant Level
 Sub_Lab: Anatek Labs, Inc.
 Comments:

McCarty Drilling & Pump, Inc.
 Brett McCarty
 10035 N. Memory Lane
 Rathdrum, ID 83858


 Lab Supervisor's Signature
 Walter Mueller

03/08/2005

ATL Order No.: 2005020194 1

Lab EPA ID No.: ID00912	Lab Sample #: 52962
Date Received: 02/11/2005	Date Reported by Lab: 03/28/2005
Compliance or Replacement Sample: Compliance	
Date Collected: 02/11/2005	Time Collected: 08:25:
Sample Type: Plant Tap	
PWS #	PWS Name: The Ridge at Blackrock Bay Homes
Sampling Location: New Well	Tag #
Collector's Name: Will	Phone: (208) 687-9170

ATL

Accurate Testing Labs, LLC

7950 Meadowlark Way
Coeur d'Alene, ID 83815

Phone (208) 762 8378

Fax (208) 762 9082

Web site: www.accuratetesting.com

E-mail: info@accuratetesting.com

Public Drinking Water System RADIOLOGICAL ANALYSIS REPORT:

FRDS	Contaminant	RESULT	Units	MGL	MDL	Analysis Date	Analyst	Method
4002	Gross Alpha Activity (Includes radium and uranium)	ND	pCi/L		1.0	03/07/2005	ENG	EPA 900.0
4006	Uranium, Combined convert to activity; multiply concentration in ug/Lx 1.0 (required if gross alpha exceeds 15pCi/L)							
4000	Net Alpha subtract uranium activity from gross alpha activity (includes radium but excludes uranium)			15pCi/L				
4020	Radium-226 (required if alpha activity is greater than 5 pCi/L)							
4030	Radium-228	ND	pCi/L		1.0	03/02/2005	ENG	EPA 904.0
4010	Radium, Combined (226&228) (add results of Ra-226 and Ra-228)			5pCi/L				
4100	Gross Beta/Photo Activity (required to measure major isotopes if activity exceeds 50 pCi/L)			4mREM				
	Radium 222 (GAS)							

ND = Not detected within sensitivity of instrument

Empty = No analysis performed for this contaminant

COMPOSITE SAMPLE DATES: 1st, 2nd, 3rd or 4th quarter or latest sample date beside Collection Date at top of form

MDL = Method detection limit

MGL = Maximum Contaminant Level

Comments: Sub-Lab: ENERGY LABORATORIES, Casper WY

McCarty Drilling & Pump, Inc.
Walter McCarty
10035 N. Memory Lane
Rathdrum, ID 83858


Lab Supervisor's Signature
Walter Mueller

03/28/2005

ATL Order No.: 2005020194 1

ATL Accurate Testing Labs, LLC

7950 Meadowlark Way Coeur d'Alene, ID 83815 Phone (208) 762 8378 Fax (208) 762 9082
 Web site: www.accuratetesting.com E-mail: info@accuratetesting.com

**STATE OF IDAHO
 DRINKING WATER COLIFORM BACTERIA ANALYSIS REPORT**

Laboratory Director: Walter Mueller
 Laboratory Supervisor, Microbiology: Rhena Cooper

McCarty Drilling & Pump, Inc.
 Brett McCarty
 10035 N. Memory Lane
 Rathdrum, ID 83858

Lab Sample Number: 52961

Lab Order Number: 2005020193 1

PWS Number:
 Water System: The Ridge at Blackrock Bay Homes
 Location: New Well
 County: Kootenai
 Collected By: Will
 Sample Type: RS-Routine Sample

Date Collected: 02/11/2005
 Time Collected: 08:25

Date Received: 02/11/2005
 Time Received: 10:15

Method	Analyte	Result	Analysis Date	Analyst
9223B-PA	Total Coliform	Absent	02/12/2005	WM
9223B-PA	E. Coll	Absent	02/12/2005	WM

NOTES:

IF YOUR RESULT IS "ABSENT": The absence of coliform bacteria indicates that your water is not contaminated with coliform bacteria.

IF YOUR RESULT IS "PRESENT": The presence of coliform bacteria means that your water is contaminated, and may contain disease causing organisms. Contaminated water should not be used for drinking water.

If coliform bacteria are present, an additional test has been run for Escherichia coli bacteria. The result for this test is also reported as being present or absent.

Lab EPA ID No.: ID00912	Lab Sample #: 79183
Date Received: 07/20/2007	Date Reported by Lab: 05/28/2009
Compliance or Replacement Sample: Compliance	
Date Collected: 07/20/2007	Time Collected: 14:30:
Sample Type: Plant Tap	
PWS #	PWS Name: Estates at Black Rock
Sampling Location: Well #2	Tag #
Collector's Name: R. Agueros	Phone: (208) 772-3230

ATL

Accurate Testing Labs, LLC

7950 Meadowlark Way
 Coeur d'Alene, ID 83815
 Phone (208) 762 8378
 Fax (208) 762 9082

Web site: www.accuratetesting.com
 E-mail: info@accuratetesting.com

Public Drinking Water System INORGANIC CHEMICAL (IOC) ANALYSIS REPORT:

Phase II								Phase V							
FRDS	Contaminant	RESULT*	MCL*	MDL*	Method	Analysis Date	Analyst	FRDS	Contaminant	RESULT*	MCL*	MDL*	Method	Analysis Date	Analyst
1010	Barium	0.05	2.000	0.02	EPA 200.7	07/26/2007	WM	1036	Nickel	ND	0.10	0.02	EPA 200.7	07/26/2007	WM
1015	Cadmium	ND	0.005	.002	EPA 200.7	07/26/2007	WM	1074	Antimony	ND	0.006	.005	EPA 200.9	07/30/2007	WM
1020	Chromium	ND	0.100	0.01	EPA 200.7	07/26/2007	WM	1075	Beryllium	ND	0.004	.002	EPA 200.7	07/26/2007	WM
1035	Mercury	ND	0.002	.0005	EPA 245.1	08/03/2007	WM	1085	Thallium	ND	0.002	.001	EPA 200.9	07/30/2007	WM
1038	Ti (NO2/NO3)	ND	10.0	0.5	EPA 300.0	07/22/2007	WM	Other IOCs							
1040	Nitrate	ND	10.0	0.5	EPA 300.0	07/22/2007	WM	1005	Arsenic	ND	0.010	0.005	EPA 200.9	07/27/2007	WM
1041	Nitrite	ND	1.0	0.5	EPA 300.0	07/22/2007	WM	1025	Fluoride	0.3	4.000	0.2	EPA 300.0	07/22/2007	WM
1045	Selenium	ND	0.050	.005	EPA 200.9	07/30/2007	WM	1052	Sodium	11.08		0.30	EPA 200.7	07/26/2007	WM
1024	Cyanide														
Secondary IOCs (optional)															
1002	Aluminum							1055	Sulfate	13.5	250.0	1.50	EPA 300.0	07/22/2007	WM
1003	Ammonia							1095	Zinc						
1016	Calcium	20.40		0.1	EPA 200.7	07/27/2007	WM	1905	Color						
1017	Chloride							1915	Hardness	92.7		0.2	SM 2340	07/27/2007	WM
1022	Copper							1920	Odor						
1027	Hyd. Sulfide							1925	pH	7.46			EPA 150.1	07/23/2007	WM
1028	Iron	0.92	0.30	0.02	EPA 200.7	07/27/2007	WM	1926	Conductivity						
1031	Magnesium	10.20		0.03	EPA 200.7	07/27/2007	WM	1927	Alkalinity	102.0		0.1	EPA 310.1	07/25/2007	BG
1032	Manganese	0.11	0.05	0.01	EPA 200.7	07/27/2007	WM	1930	Diss. Solids	161.0	500.0	1.00	EPA 160.1	07/26/2007	AE
1042	Potassium							1997	Langlier Indx	-0.992			Misc.	07/30/2007	WM
1049	Silica SiO2							2905	Surfactants						
1050	Silver							1030	Lead						

*Reported in mg/L unless otherwise noted, units differ for secondary MCLs depending on contaminant

ND = Not detected within sensitivity of instrument

Empty = No analysis performed for this contaminant

MDL = Method detection limit

MCL = Maximum Contaminant Level

Comments:

United Pump and Drilling
 Richard Agueros
 3125 W. Hayden Ave
 Hayden Lake, ID 83835

ARCHIVE COPY

05/28/2009

Lab Supervisor's Signature

Walter Mueller

ATL Order No.: 2007070396 2

Lab EPA ID No.: ID00912	Lab Sample #: 79183
Date Received: 07/20/2007	Date Reported by Lab: 05/28/2009
Compliance or Replacement Sample: Compliance	
Date Collected: 07/20/2007	Time Collected: 14:30
Sample Type: Plant Tap	
PWS #	PWS Name: Estates at Black Rock
Sampling Location: Well #2	Tag #
Collector's Name: R. Agueros	Phone: (208) 772-3230

ATL

Accurate Testing Labs, LLC

7950 Meadowlark Way
 Coeur d'Alene, ID 83815
 Phone (208) 762 8378
 Fax (208) 762 9082

Web site: www.accuratetesting.com
 E-mail: info@accuratetesting.com

Public Drinking Water System VOLATILE ORGANIC (VOC) ANALYSIS REPORT:

Method: EPA 524.2

Analysis Date: 07/26/2007

Analyst: ANA

FRDS	Contaminant	RESULT*	MCL*	MDL*	FRDS	Contaminant	RESULT*	MCL*	MDL*
2378	1,2,4-Trichlorobenzene	ND	70.0	0.5	2979	trans-1,2-Dichloroethylene	ND	100.0	0.5
2380	cis-1,2-Dichloroethylene	ND	70.0	0.5	2980	1,2-Dichloroethane	ND	5.0	0.5
2950	Trihalomethanes-Total	ND	100.0	0.5	2981	1,1,1-Trichloroethane	ND	200.0	0.5
2943	Bromodichloromethane	ND		0.5	2982	Carbon Tetrachloride	ND	5.0	0.5
2942	Bromoform	ND		0.5	2983	1,2-Dichloropropane	ND	5.0	0.5
2941	Chloroform	ND		0.5	2984	Trichloroethylene	ND	5.0	0.5
2944	Dibromochloromethane	ND		0.5	2985	1,1,2-Trichloroethane	ND	5.0	0.5
2955	Xylenes-Total	ND	1000	0.5	2987	Tetrachloroethylene	ND	5.0	0.5
2964	Dichloromethane	ND	5.0	0.5	2989	Monochlorobenzene	ND	100.0	0.5
2968	o-Dichlorobenzene	ND	600.0	0.5	2990	Benzene	ND	5.0	0.5
2969	p-Dichlorobenzene	ND	75.0	0.5	2991	Toluene	1.1	1000	0.5
2976	Vinyl Chloride	ND	2.0	0.5	2992	Ethylbenzene	ND	700.0	0.5
2977	1,1-Dichloroethylene	ND	7.0	0.5	2996	Styrene	ND	100.0	0.5

*Reported in ug/L unless otherwise noted
 ND = Not detected within sensitivity of instrument
 Empty = No analysis performed for this contaminant
 MDL = Method detection limit
 MCL = Maximum Contaminant Level
 VOC: Sub_Lab: Anatek Labs, Inc.

Comments:

United Pump and Drilling
 Richard Agueros
 3125 W. Hayden Ave
 Hayden Lake, ID 83835

ARCHIVE COPY 05/28/2009 

Lab Supervisor's Signature
 Walter Mueller

ATL Order No.: 2007070396 2

Lab EPA ID No.: ID00912	Lab Sample #: 79183
Date Received: 07/20/2007	Date Reported by Lab: 05/28/2009
Compliance or Replacement Sample: Compliance	
Date Collected: 07/20/2007	Time Collected: 14:30:
Sample Type: Plant Tap	
PWS #	PWS Name: Estates at Black Rock
Sampling Location: Well #2	Tag #
Collector's Name: R. Agueros	Phone: (208) 772-3230

ATL

Accurate Testing Labs, LLC

7950 Meadowlark Way
Coeur d'Alene, ID 83815
Phone (208) 762 8378
Fax (208) 762 9082

Web site: www accuratetesting.com
E-mail: info@accuratetesting.com

Public Drinking Water System SYNTHETIC ORGANIC (SOC) ANALYSIS REPORT:

FRDS	Contaminant	RESULT*	Method	MCL*	MDL*	Analysis Date	Analyst
2005	Endrin	ND	EPA 505	2.0	0.03	08/01/2007	ANA
2010	Lindane	ND	EPA 505	0.2	0.02	08/01/2007	ANA
2015	Methoxychlor	ND	EPA 505	40	0.1	08/01/2007	ANA
2020	Toxaphene	ND	EPA 505	3.0	1	08/01/2007	ANA
2031	Dalapon	ND	EPA 515.3	200	1.0	08/01/2007	ANA
2032	Diquat	ND	EPA 549.2	20	0.4	08/02/2007	ANA
2033	Endothall	ND	EPA 548.1	100	9	08/10/2007	ANA
2034	Glyphosate	ND	EPA 547	700	6	07/24/2007	ANA
2035	Di(2-ethylhexyl)adipate	ND	EPA 525.2	400	2.0	08/09/2007	ANA
2036	Oxamyl	ND	EPA 531.1	200	1	08/07/2007	ANA
2037	Simazine	ND	EPA 525.2	4.0	0.07	08/09/2007	ANA
2040	Picloram	ND	EPA 515.3	500	0.1	08/01/2007	ANA
2041	Dinoseb	ND	EPA 515.3	7	0.1	08/01/2007	ANA
2042	Hexachlorocyclopentadiene	ND	EPA 525.2	50	0.1	08/09/2007	ANA
2046	Carbofuran	ND	EPA 531.1	40	0.9	08/07/2007	ANA
2050	Atrazine	ND	EPA 525.2	3.0	0.1	08/09/2007	ANA
2051	Alachlor	ND	EPA 525.2	2.0	0.1	08/09/2007	ANA
2065	Heptachlor	ND	EPA 505	0.4	0.04	08/01/2007	ANA
2067	Heptachlor Epoxide	ND	EPA 505	0.2	0.02	08/01/2007	ANA
2105	2,4-D	ND	EPA 515.3	70	0.1	08/01/2007	ANA
2110	2,4,5-TP	ND	EPA 515.3	50	0.1	08/01/2007	ANA
2274	Hexachlorobenzene	ND	EPA 525.2	1.0	0.1	08/09/2007	ANA
2039	Di(2-ethylhexyl)phthalate	ND	EPA 525.2	6	0.6	08/09/2007	ANA
2306	Benzo[a]pyrene	ND	EPA 525.2	0.2	0.02	08/09/2007	ANA
2326	Pentachlorophenol	ND	EPA 515.3	1	0.04	08/01/2007	ANA
2383	PCB's	ND	EPA 505	0.5	0.01	08/01/2007	ANA
2931	DBCP	ND	EPA 504.1	0.2	0.02	07/30/2007	ANA
2946	EDB	ND	EPA 504.1	0.05	0.01	07/30/2007	ANA
2959	Chlordane	ND	EPA 505	2.0	0.10	08/01/2007	ANA

*Reported in ug/L unless otherwise noted
 ND = Not detected within sensitivity of instrument
 Empty = No analysis performed for this contaminant
 MDL = Method detection limit
 MCL = Maximum Contaminant Level
 Sub_Lab: Anatek Labs, Inc.
 Comments:

United Pump and Drilling
Richard Agueros
3125 W. Hayden Ave
Hayden Lake, ID 83835

ARCHIVE COPY

05/28/2009 

Lab Supervisor's Signature
Walter Mueller

ATL Order No.: 2007070396 2

Lab EPA ID No.: ID00912	Lab Sample #: 79183
Date Received: 07/20/2007	Date Reported by Lab: 05/28/2009
Compliance or Replacement Sample: Compliance	
Date Collected: 07/20/2007	Time Collected: 14:30:
Sample Type: Plant Tap	
PWS #	PWS Name: Estates at Black Rock
Sampling Location: Well #2	Tag #
Collector's Name: R. Agueros	Phone: (208) 772-3230

ATL

Accurate Testing Labs, LLC

7950 Meadowlark Way
 Coeur d'Alene, ID 83815
 Phone (208) 762 8378
 Fax (208) 762 9082
 Web site: www.accuratetesting.com
 E-mail: info@accuratetesting.com

Public Drinking Water System RADIOLOGICAL ANALYSIS REPORT:

FRDS	Contaminant	RESULT	Units	MCL	MDL	Analysis Date	Analyst	Method
4002	Gross Alpha Activity (includes radium and uranium)	1.4 +/-0.5	pCi/L		1.0	08/12/2007	ENG	EPA 900.0
4006	Uranium, Combined convert to activity; multiply concentration in ug/Lx 0.677 (required if gross alpha exceeds 15pCi/L)	ND	ug/L	30	1.0	08/09/2007	ENG	EPA 200.8
4000	Net Alpha subtract uranium activity from gross alpha activity (includes radium but excludes uranium)			15pCi/L				
4020	Radium-226 (required if alpha activity is greater than 5 pCi/L)	ND	pCi/L		1.0	08/13/2007	ENG	EPA 903.0
4030	Radium-228	ND	pCi/L		1.0	08/07/2007	ENG	RA-05
4010	Radium, Combined (226&228) (add results of Ra-226 and Ra-228)	ND	pCi/L	5pCi/L	1.0	08/14/2007	ENG	Calculation
4100	Gross Beta/Photo Activity (required to measure major isotopes if activity exceeds 50 pCi/L)			4mREM				
	Radium 222 (GAS)							

ND = Not detected within sensitivity of instrument

Empty = No analysis performed for this contaminant

COMPOSITE SAMPLE DATES: 1st, 2nd, 3rd or 4th quarter or latest sample date beside Collection Date at top of form

MDL = Method detection limit

MCL = Maximum Contaminant Level

Comments: Sub-Lab: ENERGY LABORATORIES, Casper WY

United Pump and Drilling
 Richard Agueros
 3125 W. Hayden Ave
 Hayden Lake, ID 83835

ARCHIVE COPY

05/28/2009



Lab Supervisor's Signature
 Walter Mueller

ATL Order No.: 2007070396 2

ATL Accurate Testing Labs, LLC

7950 Meadowlark Way Coeur d'Alene, ID 83815 Phone (208) 762 8378 Fax (208) 762 9082
Web site: www.accuratetesting.com E-mail: info@accuratetesting.com

STATE OF IDAHO

DRINKING WATER COLIFORM BACTERIA ANALYSIS REPORT

Laboratory Director: Walter Mueller
Laboratory Supervisor, Microbiology: Rhena Cooper

United Pump and Drilling
Richard Agueros
3125 W. Hayden Ave
Hayden Lake, ID 83835

Lab Sample Number: 79182

Lab Order Number: 2007070396 1

PWS Number:

Water System: Estates at Black Rock

Location: Well #2

County: Kootenai

Collected By: R. Agueros

Sample Type: RS-Routine Sample

Date Collected: 07/20/2007

Time Collected: 14:30

Date Received: 07/20/2007

Time Received: 16:55

Method	Analyte	Result	Analysis Date	Analyst
9223B-PA	Total Coliform	Absent	07/22/2007	WM
9223B-PA	E. Coli	Absent	07/22/2007	WM

NOTES:

IF YOUR RESULT IS "ABSENT": The absence of coliform bacteria indicates that your water is not contaminated with coliform bacteria.

IF YOUR RESULT IS "PRESENT": The presence of coliform bacteria means that your water is contaminated, and may contain disease causing organisms. Contaminated water should not be used for drinking water.

If coliform bacteria are present, an additional test has been run for Escherichia coli bacteria. The result for this test is also reported as being present or absent.

DRAFT