The following represent substantive comments that were received by DEQ from June 30 to July 21, 2014 for the Black Butte Copper Aquifer Test 2014 Environmental Assessment (EA). DEQ categorized and summarized all substantive comments received, and responded below. All comments are on file at DEQ. Some comments were more appropriate for baseline data requirements for an operating permit application. Those comments were outside the scope of this EA.

*Arsenic*

***Comment**: Concern that the water should be treated because it would contain arsenic.*

***Response:*** Groundwater in the project area does contain elevated levels of arsenic, and would likely require treatment if the water were to be discharged into surface water or groundwater. However, the water from the proposed water well testing would be discharged as irrigation at the Land Application Disposal Area (LAD). The LAD site is a vegetated area dominated by pasture grasses. Water from the aquifer tests would be applied at an irrigation rate that would not exceed the rates at which water would evaporate from the land surface and/or be utilized by the growing vegetation. Because the water would be land applied within seasonally adjusted agronomic rates, no discharge of the irrigated water to either surface water or groundwater is predicted to occur. Evapotranspiration of the irrigated water would result in accumulation of arsenic within the soil, but the concentrations of arsenic in the groundwater to be collected during the aquifer tests are within acceptable levels for land application disposal based upon EPA guidance (2006 Process Design Manual, Land Treatment of Municipal Wastewater Effluents). Based upon expected water quality of the test wells, expected well yields, and duration of the tests, it was calculated that arsenic accumulation in the soil of the irrigation area would be less than 0.1 pounds per acre, or approximately 5% of the recommended annual loading limit for arsenic (1.78 pounds per acre) applied to agricultural crop lands.

***Comment:** Department should require water treatment at the site to nondegradation water quality standards.*

***Response:*** As noted above, water treatment is not required for this project because discharge to State waters of the water produced during the aquifer tests is not predicted. The project is specifically designed to avoid discharge to groundwater.

***Comment**: (Treated) water should be discharged to groundwater.*

***Response:*** Water will not be discharged to either ground or surface water; therefore treatment of the water is not required. As noted above, water produced during the aquifer tests would be disposed via irrigation at less than agronomic uptake rates. Although discharge of this water to groundwater could be authorized, reinjection of the water into

groundwater within the study area during or after the aquifer tests could compromise the quality of the data collected during the tests because it could affect water levels in either the pumping wells or the observation wells. Collection of these data is essential to the success of the tests, and possible influences on groundwater levels other than the aquifer test itself should be minimized.

***Comment:*** *What is the level of arsenic in this water? Is it more than the 10 parts per billion (ppb) or 0.010 parts per million (ppm) allowed in drinking water?*

***Response:*** The level of arsenic in the groundwater is above the 0.010 ppm allowed in drinking water, but the water pumped from the wells would not be returned to groundwater or surface water, and would not affect drinking water sources.

Drinking water standards apply to surface water and groundwater as well as public water supplies, but are not relevant to the quality of the water generated during the proposed aquifer tests. The proponent (Tintina) proposes to land apply water generated in the aquifer tests at less than agronomic uptake rates. The final disposition of arsenic in this water will be in soils of the LAD area. Arsenic concentrations in the water that would be applied to the LAD site are substantially lower than the Reclaimed Water Recommended Limit of 2.0 ppm based upon EPA guidance (2006 Process Design Manual, Land Treatment of Municipal Wastewater Effluents).

In this EA, DEQ predicted that water extracted from the proposed test wells would have similar arsenic concentrations as existing wells at the project site completed in similar geologic units. PW-9 arsenic concentrations were assumed to be similar to levels measured in well PW-4 (both screened in the Upper Sulfide Zone). Wells PW-8 and PW-10 were assumed to have similar water quality to well PW-3 (all screened in the Lower Newland Formation). Arsenic concentrations from the representative wells are below the limits recommended for irrigation water.

This analysis was based on sufficient data to determine that the arsenic loading from the proposed land application would be substantially less than recommended limits.

**ARSENIC WATER QUALITY DATA FOR**

**REPRESENTATIVE GROUNDWATER WELLS**

| | **PW-3** | **PW-3** | **PW-4** | ***Reclaim Water Recommended Limits[1]*** |
|---|---|---|---|---|
| **SAMPLE DATE** | **5/10/2012** | **1/16/2014** | **5/17/2012** | |
| Arsenic (dissolved) in ppm | 0.005 | 0.005 | 0.067 | *2.0* |

1) USEPA, 2006 from Rowe, D.R. and I.M. Abel-Magid, 1995 (for land application sites that will be used for up to 20 years).

Tintina drilled and sampled wells PW-8, PW-9 and PW-10 in July 2014 and the results are presented below. The arsenic levels measured in PW-8, PW-9 and PW-10 are above the 0.010 ppm allowed in drinking water, but within recommended levels for irrigation water (2.0 ppm).

These data confirm DEQ's conclusion in the EA that the quality of water to be produced during the aquifer tests is suitable for disposal via land application and would not result in impacts to soils or vegetation.

**ARSENIC WATER QUALITY DATA FOR**

**AQUIFER TEST GROUNDWATER WELLS**

| | **PW-8** | **PW-9** | **PW-10** | ***Reclaim Water Recommended Limits[1]*** |
|---|---|---|---|---|
| **SAMPLE DATE** | **6/24/2014** | **6/26/2014** | **7/02/2014** | |
| Arsenic (dissolved) in ppm | 0.013 | 0.060 | 0.034 | *2.0* |

1) USEPA, 2006 from Rowe, D.R. and I.M. Abel-Magid, 1995 (for land application sites that will be used for up to 20 years).

***Comment:*** *General comments about concern of arsenic loading to soils in LAD area*
For the EA, arsenic loading to soils in the LAD area was calculated using arsenic concentrations measured in nearby wells (PW-3 and PW-4) completed in similar geologic units, and assumed well yields based upon previous aquifer tests completed on wells PW-3 and PW-4.

The wells that would be subjected to aquifer tests have been installed and sampled since the preparation of the EA, which allows an assessment of whether the actual impacts of the pump test would be within the range of conditions analyzed in the EA. Anticipated arsenic loading to LAD area soils has dropped from the originally estimated 0.1 pounds per acre down to 0.013 pounds per acre. If aquifer tests are also performed on wells PW-6 and PW-7, maximum cumulative loading of arsenic in the LAD area soils is projected to increase to 0.017 pounds per acre, a concentration that is still less than 1% of the recommended annual loading limit for arsenic applied to agricultural crop lands via irrigation.

Although the concentrations of arsenic in wells PW-8 and PW-10 are higher than was initially assumed, overall loading of arsenic to soils in the irrigation area would still be lower than originally estimated because the well yields (estimated during airlift testing during completion of the wells) are less than had been projected.

Tintina originally proposed to pump well PW-8 at a rate of 30 gallons per minute for 30 days. Air lift testing during drilling indicated the well yield to be only between 10 and 15 gallons per minute. It is likely that sustainable pumping rates from well PW-8 during a 30-day test would be 10 gallons per minute or less.

Well PW-10 yielded less than one gallon per minute during airlift testing. This well would be evaluated further during the aquifer testing program. If PW-10 is not capable of producing more than 5 gallons per minute, no pumping test would be performed on it.

Although wells PW-8 and PW-10 both have higher concentrations of arsenic than had been assumed based upon the quality of water from well PW-3, both wells have lower yields than had been projected, and consequently the loading of arsenic to soils in the irrigation area from these well tests would also be lower than previously analyzed.

Well PW-9 yielded approximately 7.5 gallons per minute during airlift testing, and is expected to have a sustained yield of approximately 5 gallons per minute during the proposed 30-day aquifer test. This is the same as the originally proposed pumping rate for well PW-9, but given that the arsenic concentration in well PW-9 is less than had been assumed, total loading of arsenic to soils in the irrigation area from the PW-9 test would be less than previously calculated.

*Land Application*

***Comment:*** *Land application will not prevent discharge from reaching groundwater and possibly surface flows. Zero percent discharge is not possible.*

***Response:*** A properly designed and managed land application system would prevent discharge from reaching groundwater and surface water.

The LAD system for this project was designed to apply water to a vegetated site at less than the rate of evapotranspiration. Under such conditions, all water applied would either evaporate from the land surface or be utilized by the vegetation. A software program developed by the USDA Natural Resources Conservation Service (NRCS) was used to determine irrigation water requirements for pasture grass at the land application site during the months of June through September. This program takes into account average rainfall amounts and deducts these from irrigation requirements. Because actual daily rainfall amounts may deviate from the average, Tintina would also install a rain gauge near the LAD site and would modify application rates and timing in response to actual rain events and resulting irrigation needs. The NRCS program was used to determine the acreage of land required in order to dispose of anticipated volumes of water produced by the aquifer tests. To avoid soil saturation and possible discharge to groundwater, Tintina determined the sizing of the LAD area and application rates such that irrigation rates would remain below 90% of irrigation water requirements. Maintaining water application rates below irrigation water requirements would ensure that all of the applied water is consumed via evapotranspiration. Further reduction of application rates would provide a greater margin of safety, assuring that soil saturation would not occur.

Following is an example presenting calculated site-specific irrigation requirements for August: The NRCS program estimates that the irrigation water requirement for pasture grass at the LAD site during August is 4.52 inches per month. The required LAD area size was determined by considering the anticipated pumping rate (30 gallons per minute in the case of well PW-8) and the goal of applying no more than 90% of the monthly irrigation water requirement (i.e. 4.07 inches per acre per month for August). This results in a minimum required application area acreage of 8.3 acres. In order to discharge the volume of water produced by the pump test (30 gpm x 1440 minutes per day= 43,200 gallons per day), the LAD system would need to be operated for 5.4 hours per day. This would be scheduled during the afternoon hours when evapotranspiration rates are highest. The LAD site would be allowed to dry during the remaining hours of each day. The actual LAD system design is for 12 acres rather than the calculated required acreage of 8.3, which means actual irrigation rates would be lower than 90% of irrigation water requirements by a proportional amount. Air lift testing of PW-8 during well development indicated that the well is not likely to yield more than 10 gallons per minute during the proposed 30 day pump test; as a result, the hours per day of operation of the LAD system would be reduced proportionally (to less than 2 hours per day on average) and the daily volume of water applied would be a still smaller fraction of irrigation water requirements.

Several comments were received which compared this proposed project with both historic and ongoing examples of land application disposal of water associated with various mining projects. The comparison is not appropriate. None of the referenced projects involved

land application systems that were designed or operated with the goal of applying water to the irrigation areas at less than seasonally adjusted agronomic uptake rates. Therefore, there should be no expectation that the referenced projects could have achieved zero discharge conditions under their design and operational parameters. This proposed project is fundamentally different than the other referenced land application projects for the following reasons:

1. It would occur during a short duration. Two 30-day aquifer tests are proposed. One 1-day aquifer test involving lower-yield wells will also occur. In contrast, the land application area for the Stillwater mine is used to manage water pumped from the underground mine to prevent flooding of the mine, plus water that collects in surface impoundments due to precipitation. These water sources have existed at the mine and required water management since operations began over 25 years ago, and will continue to require water management and disposal until after mine closure. Although the Stillwater mine's land application areas have been operated to discharge to groundwater (i.e. irrigation rates exceed agronomic uptake rates), nondegradation criteria for groundwater beneath the Stillwater LAD sites have been met.

2. It would involve a certain and finite volume of applied water. At the pumping rates and aquifer test durations for wells PW-8, PW-9, and PW-10, a total volume of 1,555,200 gallons of groundwater would be extracted and irrigated in the land application area. The LAD system was designed to accommodate this volume of water without exceeding agronomic uptake rates and thus avoid discharge to groundwater. As originally proposed, water pumped from the wells would have been stored in a holding pond prior to land application, and a larger pond constructed to retain water over winter if the aquifer tests could not be completed during the 2014 growing season. The proposed plan left open the possibility that large precipitation events could result in overtopping of the storage pond(s) before the water could be sent to irrigation. In response to comments, and to preclude this possibility, Tintina will be required to store all water within tanks that will preclude interception of rainfall.

In contrast, past land application projects at sites such as the Kendall and Zortman mines have been initiated in response to water management emergencies resulting from significant precipitation events. These are cyanide heap leach mines which have large lined leaching facilities that are open to the atmosphere. Land application was initiated at these mines to provide some level of treatment for waters which would otherwise have overtopped containment facilities and discharged to surface water or groundwater with no

treatment at all. Continued land application occurs at these sites for the purpose of managing water that still collects within the leach pads even though they are now reclaimed and cyanide concentrations are much lower. This on-going land application generally now involves pre-treatment of water, more carefully controlled application rates, and increased size of irrigation areas to reduce the potential for impacts to groundwater.

***Comment:*** *Liners will leak.*
***Comment****: Consider the use of tanks to store all the water generated from the aquifer test.*

***Response:*** As noted on Pages 1 and 10 (approval with modification) of the EA, in the event that a prolonged rainfall during the pumping test precludes discharge to the LAD area at agronomic rates for a period longer than the water can be contained in the holding pond, Tintina would either temporarily store excess water in tanks or interrupt the pumping test. In response to public comments concerning the potential for release of water from storage ponds due to either leakage or excess precipitation, the project has been modified to require that all water be stored in tanks. These tanks are fully enclosed and would not intercept precipitation so that the uncertainty associated with precipitation events can be eliminated. This project design change would eliminate the need for any liners.

***Comment:*** *Water seeps through the sediments and roots affecting the microbial action and root structures thus effecting trophic levels of the future species that live there.*
***Response:*** This project proposes irrigation of water at less than agronomic rates; thus, water would be retained within the soil layer until it evaporates or is consumed by vegetation. The quantity of arsenic that could be applied to soils in the irrigation area in this proposal would not exceed 5% of the recommended annual loading limit for arsenic applied to agricultural crop lands. While arsenic can be toxic to plants and soil biota at elevated soil concentrations, the toxicity levels for crops are taken into account when the recommended irrigation/load limits are developed for land application over a period of decades.

The total estimated arsenic load, which includes the potential increase from 2 additional wells, is 0.017 lb/ac or alternatively, 0.177 mg/ft$^2$. The baseline soil samples have been collected, but laboratory results are not currently available. Samples would be collected after irrigating to determine actual loading.

While site specific data from the LAD area are not yet available, estimates can be made using soil geochemistry data available through the United States Geological Survey (USGS). An updated USGS study (published 2014) collected soil geochemistry data across the nation with samples collected from the top 5 cm and the A and C horizons (of variable depth). These data indicate that arsenic concentrations across central Montana are in the upper 10 percent for the United States, ranging from 10.4 to 166 mg/kg in the top 5 cm and 10.8 to 217 mg/kg in the A horizon.

If the lowest concentrations from the given range are used for the site (10.4 mg/kg), then one cubic foot of topsoil would contain approximately 472 mg of arsenic. The accumulated amount of arsenic applied to the surface (estimated for the entire test, 0.177 mg/ft$^2$) is ~ 0.04% of the quantity of arsenic already contained in one cubic foot of topsoil. The impact from arsenic on the growth conditions for plants and soil microbes would be negligible.

***Comment:*** *Proposed land application calculations are inappropriate because they are based entirely on NRCS irrigation requirements for crops, when it appears that the area includes native vegetation.*

***Response:*** The calculation of irrigation water requirements is based upon water use by pasture grass. The proposed irrigation area is densely vegetated with a mixture of plants dominated by non-native grasses (timothy and Kentucky bluegrass, i.e. pasture grasses) with lesser amounts of native forbs. Therefore, the use of irrigation water requirement calculations based on pasture grasses is appropriate.

***Comment:*** *Tintina's proposal contains insufficient baseline data to determine the potential effects of land application of water from the YNL-B zone.*

***Response:*** No monitoring wells had been completed in the YNL-B zone (beneath the Upper Sulfide Zone) at the time of preparation of the proposal, so the water quality of well PW-10 was estimated based upon that of a nearby well (PW-3) that is also completed outside of the Upper Sulfide Zone (however well PW-3 is completed above this zone in the YNL-A zone). The YNL-B zone contains relatively minor amounts of sulfide minerals and has been shown from geochemical kinetic testing to be strongly net neutralizing. The EA predicted that the water quality of the YNL-B zone would be similar to that of well PW-3. Well PW-3 has an arsenic concentration of 0.005 ppm and yielded approximately 30 gpm during a previous test. The aquifer test proposed for well PW-10 would involve pumping the well at 30 gallons per minute for 24 hours. The analysis of the PW-10 pump test was based on best available data, and was sufficient to determine that the arsenic loading from land application of the water from PW-10 would be within acceptable levels that would preclude impacts to soils or vegetation.

Well PW-10 has now been completed in the YNL-B zone and has been sampled. It has an arsenic concentration of 0.034 ppm. While this arsenic concentration is greater than had been predicted for loading calculations, the airlift test on the well indicated that it produces less than one gallon per minute of water. Tintina has indicated that they would not likely be able to conduct a pumping test on the well unless it yields at least 5 gallons per minute, so this well is not likely to be subjected to an aquifer test, in which case no water from the YNL-B zone would be applied to the irrigation area.

The total amount of arsenic from the aquifer test on PW-10 as originally proposed would have been 0.005 mg/L x 3.785 liters/gallon x 30 gallons per minute x 1440 minutes per day

x 1 day = 0.818 grams. Given the sample results from well PW-10 and assuming that the well could in fact be pumped at 5 gpm for 24 hours, the resulting quantity of arsenic produced and distributed to the LAD area would be 0.034 mg/L x 3.785 liters/gallon x 5 gpm x 1440 minutes/day x 1 day = 0.927 grams. This is very similar to the previously estimated arsenic loading from well PW-10, and given that well PW-8 also yields less water than was anticipated, the combined load of arsenic to be applied to the LAD area from all wells to be tested would remain within levels previously analyzed and disclosed in the EA.

***Comment:*** *The EA doesn't analyze the potential for a large storm event to cause a release from the holding pond or contingency pond; nor does it provide a primary plan for over-winter storage of LAD water.*

***Response:*** The proposed holding pond and contingency pond designs included "freeboard" volume to allow additional capacity for the accumulation of precipitation. However, it is always possible that a large storm event could occur that could exceed the capacity of the ponds and result in a release. To address this concern, DEQ will require that all water from the aquifer test be stored in tanks which would not intercept precipitation so that the uncertainty associated with precipitation events can be eliminated.

***Comment:*** *Timing of the evapotranspiration will be off (analysis based on the project occurring in July, August and September). Tintina should construct a double--lined, monitored contingency pond before the aquifer tests start.*
***Response:*** The proposed irrigation plan recognizes that evapotranspiration rates may decline from August through September and modifies application rates accordingly. Irrigation will not occur in October or later months. Due to the late start of the aquifer tests, water needs to be stored over winter. To eliminate ground disturbance associated with a large storage pond, as well as comments expressing concerns associated with the potential for pond liner leakage and the potential for large storm events to exceed the pond capacity and result in a discharge, the over winter water storage plan has been modified to require water storage in tanks as had previously been proposed for storage of excess water in the event that wet conditions precluded irrigation during an aquifer test.

<u>Other</u>

***Comment:*** *The proposal contains inadequate requirements for monitoring strontium. The proposed aquifer test indicates that the LAD water will contain elevated levels of strontium. Table 11 does not include strontium within the range of constituents that must be monitored.*

***Response:*** All water quality monitoring associated with the aquifer tests would include analysis for strontium. Table 11 of the Aquifer Testing Work Plan lists Tintina's soil sampling parameters, and was limited to metals for which EPA has established criteria for loading to soils from LAD. Tintina has collected baseline soil samples from the LAD site and has submitted them to a laboratory for analysis. Tintina would be required to test soils for a more extensive suite than that presented in Table 11, including strontium.

***Comment:*** *The EA provides insufficient baseline data and monitoring requirements to evaluate the potential adverse effects of dewatering and LAD. Tintina's proposal calls for five lysimeters to be located throughout the LAD area as monitoring devices. However, in the event there is water in the lysimeters, a discharge to groundwater will have occurred. This approach does not prevent a discharge from occurring; it simply identifies an impact after it has occurred.*

***Response:*** As noted in the EA, baseline water quality data collection in the project area has been occurring since May of 2011. This provides over three years of baseline information from at least 11 surface water monitoring sites and 11 monitoring wells. Several springs have also been sampled.

For this aquifer test, many additional monitoring points have been added, including new wells, wells not routinely monitored, new piezometers, and new surface water monitoring sites. Transducers have been installed in most of the observation wells for these aquifer tests to obtain continuous water level data. DEQ believes these monitoring requirements are sufficient to evaluate the proposed aquifer tests.

The land application schedule is designed to avoid discharge to groundwater from the LAD system by limiting application rates to less than anticipated evapotranspiration rates. In addition to following NRCS irrigation water requirements for the type of vegetation present in the LAD area and accounting for declining evapotranspiration rates later in the season, Tintina would use a rain gauge located at the LAD site to determine when recent precipitation events have met the site's irrigation water requirements and LAD should be suspended until drier conditions prevail.

The LAD system will be shut down each evening and operations would only resume if and when conditions are suitable for evapotranspiration to consume all applied water. The LAD plan does not rely on the lysimeters to prevent discharge to groundwater; rather, the lysimeters provide an additional means of data collection to document that the LAD system has been operated properly.

Presence of water in the lysimeters does not predict discharge to groundwater. The lysimeters are above a clay layer which is 30-40 feet above the potentiometric surface. Water in the lysimeters would not necessarily mean that a discharge to groundwater has occurred. Testing water in lysimeters would indicate the quality of water that might reach groundwater if excessive irrigation occurred. The LAD area is covered by approximately one foot of topsoil (dark silty loam) underlain by plastic silty clay to a depth of at least 4.5 feet. The lysimeters were installed at depths of 3.5 to 4.5 feet, and additional silty clay beneath the lysimeters may prevent discharge to groundwater even if water derived from LAD were detected in the lysimeters.

***Comment:*** *The EA provides insufficient baseline data to evaluate the potential adverse effects of dewatering as a result of the proposed pump tests.*

***Response:*** Baseline water quality data collection in the project area has been occurring since May of 2011. This provides over three years of baseline information from at least 11 surface water monitoring sites and 11 monitoring wells. Several springs have also been sampled.

For this aquifer test, many additional monitoring points have been added, including new wells, wells not routinely monitored, new piezometers, and new surface water monitoring sites. Data collection has been initiated. Transducers have been installed in most of the observation wells for these aquifer tests to obtain continuous water level data. Most of these monitoring sites were identified on Figure 2 in the EA.

Additional monitoring sites are shown on Figure 4 of the 2014 Aquifer Testing Work Plan (June 2014). These include new surface water monitoring sites established to monitor potential responses to the aquifer testing including SW-14-1 on lower Coon Creek and SW-14-2 on lower Dry Creek.

Most of Dry Creek is an ephemeral channel and does not contain flowing water on a regular basis. Spring SP-2 is located near the head of the drainage, and spring SP-6 is located near its midpoint. Flow in the channel is only present in the last few hundred feet before its confluence with Coon Creek. Site SW-14-2 was established near the beginning of surface flow in the Dry Creek channel during June 2014. The site is located near wells PW-9 and PW-10. By early August 2014, flow in this portion of the Dry Creek channel had ceased, and a replacement surface water monitoring site was established further downstream within 200' of the confluence with Coon Creek.

A piezometer was also installed near Dry Creek site SW-14-2 which shows the presence of shallow groundwater near the channel at a depth of approximately 4 feet. The surface water monitoring sites, wells, and piezometers shown on Figure 4 of the proposal would continue to be monitored before, during, and after the pump test. The highest yielding, and most shallow, well to be pumped during the aquifer tests is well PW-8, which is located approximately 1000 feet east-northeast of the lower Dry Creek channel, and is completed at a depth of approximately 140 to 180 feet lower than the channel. Given this separation distance and the relatively short duration and low pumping rate associated with the aquifer test, no impact to surface water flow in Dry Creek or other surface waters in the area is predicted.

DEQ believes these monitoring requirements are sufficient to evaluate the proposed aquifer tests. The aquifer tests will occur for a short duration and would extract a low volume of groundwater. Existing baseline data are sufficient to conclude that these short duration, low volume aquifer tests would not result in adverse effects due to dewatering.

***Comment:*** *The EA fails to consider cumulative impacts.*
*The EA states that there are no cumulative impacts, yet Tintina's proposal states that it may also do further pump tests at PW-6 and PW-7 from its previously approved exploration*

*permit, and use the disposal plan analyzed within this EA (p. 4-6 of Tintina's proposal). The EA should disclose the location of these additional wells, the amount of water that could be pumped from these wells, and any potential cumulative effects.*

***Response:*** Wells PW-6 and PW-7 were depicted in the EA on Figures 3, 4, and 5. Air lift tests conducted when these wells were completed indicated that they have low yields and aquifer tests may not be possible. If aquifer tests do occur, they would be short term (24 hour) duration, and at low flow rates (5 gpm). The wells are completed in the Lower Copper Zone, at depths of 1230' and 1350', respectively. Due to their depth, cumulative effects from dewatering would not occur.

Water quality data for wells PW-6 and PW-7 are not available, but their chemistry is assumed to be similar to that of wells that have been completed in or near the Upper Copper Zone (e.g. wells PW-4 and PW-9). Assuming similar chemistry, aquifer testing of these two wells at 5 gpm each for 24 hours each would result in an additional 0.004 pounds per acre loading of arsenic to the LAD area, resulting in a total estimated loading to the soil from all tests (PW-8, PW-9, PW-10, PW-6, and PW-7) of 0.017 pounds per acre, which is less than 1% of the recommended annual loading limit for arsenic applied to agricultural crop lands via irrigation.

However, wells PW-6 and PW-7 are not being approved for use of the LAD.

***Comment:*** *The EA does not identify Tintina Resources as having secured discharge authorization under the Construction General Permit for land disturbing activities of one or more acres. Additionally, a "[NO]" in Section 2 indicates no Potential Surface Water Impacts. Given coverage under a NPDES/MPDES authorizing a point source discharge,* there is a potential for surface water impacts *if the permittee does not adhere to the Clean Water Act, Construction General Permit, Storm Water Pollution Prevention Plan and BMPs.*

***Comment:*** *DEQ must undertake nondegradation review for discharges into ground and surface water.*

***Response:*** Tintina Resources has previously obtained a storm water discharge permit for their overall exploration project. This proposed aquifer test project would not result in additional land disturbing activities in excess of one acre. If Tintina does not adhere to permit conditions, violation notices would be issued. The EA discloses impacts of the project as proposed, with agency required modifications.

DEQ would undertake nondegradation review for proposed discharges to groundwater or surface water in accordance with Montana law. However, this project has been designed to avoid discharges to either surface water or groundwater.

***Comment****: The EA doesn't analyze the potential for releases from the holding pond and contingency pond.*

***Response:*** The proposed storage plan for water has been modified to require that all water be stored in tanks which would eliminate the need for the holding and contingency ponds.