DOE-LM/GJ1293-2006

Office of Legacy Management

2006 Avian Wetland Surveys

Monticello Mill Tailings Site

September 2006

Work Performed by S.M. Stoller Corporation under DOE Contract No. DE–AC01–02GJ79491
for the U.S. Department of Energy Office of Legacy Management, Grand Junction, Colorado

This page intentionally left blank

Contents

Figure

Appendixes

End of current text

Summary

Biweekly surveys to identify avian population use of three wetland ponds (Wetlands 1, 2, and 3) and one sediment pond (Sediment Pond) associated with the Monticello Mill Tailings Site (MMTS) were conducted between May 4 and June 27, 2006. In addition, on May 17, 2006, a survey for avian nests to document breeding activity was conducted at Wetland 3 and at the Sediment Pond.

The 2006 survey was conducted as a follow-up to the 2005 avian survey. The 2005 and 2006 surveys were conducted as agreed upon by the OU III Biological Team Assessment Group (BTAG) to assess the active use of the ponds by avian species in order to identify potential receptors related to ambient selenium in the water and food sources. Water, sediment, and macroinvertebrate populations were sampled at each pond during separate field investigations to test for the presence of selenium.

Red-winged Blackbirds were the most abundant species observed throughout the 2006 and 2005 field seasons at all wetland ponds; their presence at the Sediment Pond was negligible. The predominant avian species present at the Sediment Pond were Bank and Cliff Swallows. The cliffs to the south and east of the Sediment Pond contained large colonies of nesting swallows, which were also noted in the 2005 survey report.

The elusive Sora was heard at all locations and observed at two of the locations. It is believed to have nested at potentially three of the pond areas based on frequency of calls and calls originating from multiple locations; one nest was located at Wetland Pond 1. Mallards were observed flying overhead at all locations and breeding is known to have occurred by two pair at the Sediment Pond. Breeding by one or two pair of Canada Geese is believed to have occurred also at the Sediment Pond.

End of current text

1.0 Introduction

The purpose of this report is to summarize the results of avian surveys conducted between May 4 and June 27, 2006 at constructed wetland ponds and a sediment retention pond at the former Monticello Mill Tailings Site, located near Monticello, UT. The constructed wetlands on the former mill site are identified as Wetlands 1, 2, and 3 and are shown on Figure 1. The Sediment Pond is located along Montezuma Creek about 0.9 mile east of the former mill site (See Figure 1). Appendix A contains a large format map developed for the 2005 survey that contains details mapped during the 2005 survey and the survey points used in 2006.

The focus of the surveys was to observe duck and wetland bird use of the four ponds and to identify whether breeding was occurring in these areas; however, all avian species observed in the area were recorded during the surveys. See Program Directive MSG 06-02 (Appendix B) for the scope of work.

The methodology used in 2005 was adapted for the 2006 field season. For example, instead of abbreviated viewing periods to accommodate two survey locations per survey date, it was determined that remaining in one place for 30 minutes provided better data. Eliminating an interruption by not relocating during the survey period reduced the stress on the birds, as evidenced by their continued visibility and song.

The following sections describe the setting, specific methodology used during the 2006 survey, the results of the survey, and finally, compare the results with prior surveys. Appendices provide summary tables, photos of nests observed, and miscellaneous information relevant to the survey.

2.0 Physical Setting

The wetland and sediment ponds are located within a broad east to southeast trending valley that contains Montezuma Creek and is immediately south of the City of Monticello. Montezuma Creek originates in the Abajo Mountains about 5 miles to the west; portions of the creek may be seasonally dry. The wetland ponds were constructed after the mill site was remediated in 2001. Wetland 2 was considered successfully restored in 2003 and Wetlands 1 and 3 were considered successfully restored in 2004. At the time of completion, the ponds were between 1.0 and 1.7 acres in size; they are presently smaller due to recent drought conditions.

During surveys in 2006, the wetland ponds largely consisted of cattails with standing open water areas occurring predominately along the perimeter of the former pond areas. The density of the cattails obscured the view of central open water areas, if present; there were small channels of open water that meandered and disappeared into central areas during surveys completed in May. By the end of June, water had greatly receded from open areas along the sides. Appendix C contains a photo of Wetland 3 showing perimeter water present in mid-May.

Although no specific water depth measurements were taken, it is believed that central areas of Wetlands 1, 2, and 3 may be as deep as 18 inches. The Red-winged Blackbird nests observed in Wetland 3 were often situated on cattails in an estimated 16-18-inches of water. Bottom conditions were soft muds and silts.

Immediately adjacent to the wetland ponds and along the creek were dense to open stands of willows grading into open areas containing grasses, sedges, and wildflowers. The surrounding area of the former mill site is dedicated park land.

The surface area of the Sediment Pond is about 0.75 acre with a reported central depth of seven feet. Beaver or muskrat lodges were noted in the upstream and downstream areas of the pond. Two beavers or muskrats were observed downstream of the pond during one of the 2006 surveys. A dense willow thicket with grasses was present on the outlet or east side of the pond. Cliffs dominated the area to the south. The inlet area contained open grassy areas as well as willow thickets immediately adjacent to the pond. A small area containing cattails was present along the western pond shoreline. To the north were small pockets of dense shrubs and trees (oak brush) and cliffs parallel to the ones to the south. Above and to the north of the cliffs are the Municipal Treatment Lagoons (shown on Figure 1). The Sediment Retention Pond was created to maintain clear flow of Montezuma Creek during surface remediation activities.

3.0 Methods

3.1 Avian Survey Methodology and Comparison to 2005 Methodology

Two surveyors from the SM Stoller staff completed all 2006 surveys. Neither surveyor was an avian specialist; however, one of the two surveyors was present at several of the 2005 surveys, which were conducted by subcontracted wildlife biologists.

Each pond was surveyed for 30 minutes from a location that was used consistently for each morning or evening survey. The selected observation points are shown on the map included in Appendix A. The evening wetland pond surveys were conducted from the south to southwest edge of the pond, while the morning surveys were conducted from the north to northeast edge of the pond. At the wetland ponds, the surveyors were in visual contact with surface water areas, which were largely filled with cattails, as well as with the immediate perimeter areas that contained standing water. At the Sediment Pond, due to difficulties in accessing good viewing points, all surveys were completed from a trail that traversed the north perimeter of the pond. At this location, the entire pond surface, including the immediate inlet and outlet areas could be observed.

The first 2006 survey, completed May 4, 2006 (evening), used the two viewing points at each pond established in 2005; however, the amount of back light present due to sun position was considered a detriment for positive identification. Additionally, ducks took flight upon hearing human movement related to changing position. Therefore, the remainder of the surveys were completed from one of the two points to optimize identification. For example, the sunrise survey consistently used an eastern 2005 location and the sunset survey used a western location.

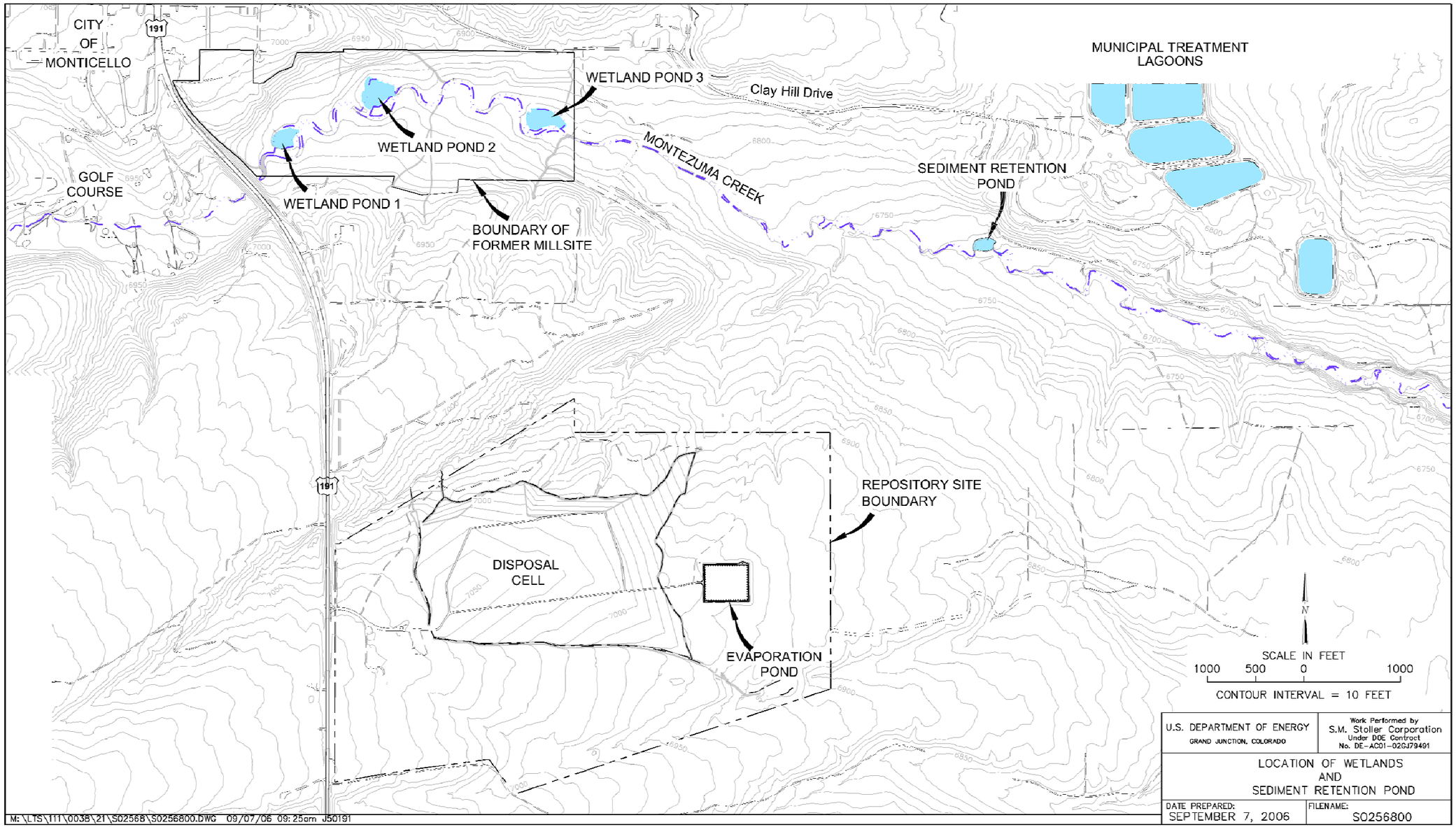

Figure 1. Location of the Wetland and Sediment Ponds

A second change from the 2005 survey protocol was to remain stationary for approximately 30 minutes at each survey point. In 2005, each of the two pond viewing locations was surveyed for 10 to 15 minutes, for a total of 20 to 30 viewing minutes per pond. It was noted during the May 4 survey that after moving to the first viewing position, it took the birds about 15 minutes to resume activity. By remaining in place for 30 minutes, the birds adjusted to our presence and resumed activities for a longer period of time. The small area of each pond allowed for good visibility of all flying or perching birds. The surveyors minimized conversation and movement.

To expand on area information, the municipal sewage or treatment lagoons, shown on Figure 1, were canvassed two times, and on the last evening and morning surveys (June 26 and 27), the cliffs north and above the Sediment Pond were accessed and an additional 30-minute period of survey time was completed from that location.

After the initial morning and evening surveys, a random order was used to determine survey time. All morning surveys were initiated approximately 30 minutes prior to sunrise and each evening survey ended approximately 30 minutes after sunset, following survey protocol established in 2005.

3.2 Nest Survey

The 2006 survey included a 1-hour avian nest reconnaissance at Wetland 3 and in the area surrounding the Sediment Pond. This was conducted on May 17. In 2005, nest surveys were conducted on two dates.

Wetland 3 was surveyed by two individuals approaching from separate points on the west edge of the pond and moving toward the center. As the center of the pond was approached, movement became increasingly more difficult due to the dense cattail growth. Although the center of the pond was not reached before the end of the survey period, it was felt that a representative sample of Red-winged Blackbird nests were observed (See photo in Appendix C).

The Sediment Pond has a defined shoreline with a central open water area. The survey began on the northeast shoreline and continued south in transects parallel to the pond through dense willow thickets and grasses. After reaching an open meadow area, the survey continued in a clockwise direction around the remainder of the pond. The inlet area contained small amounts of cattails, some open areas, and again dense willow thickets. Parallel transects were conducted in the inlet area.

4.0 Results

4.1 Avian Surveys

Close to 40 species of birds were identified in the area (including the sewage lagoons) during the surveys. In general, Red-winged Blackbirds were the dominant species present at the wetland ponds while swallows predominated at the sediment pond. The sewage lagoons were informally surveyed twice for area bird use and found to have a variety of ducks and geese present.

Specific observations by species and date are provided on Table 1, Appendix D. This table provides all observations for each species by date. In Appendix E, Table 2 provides a summary of species observed or positively identified by song organized by location. This table is more useful if the reader is interested in findings associated with a specific location. Appendix F contains a listing of common and genius and species names with a generalized location of where observed.

No state or federal protected species were identified. Several migratory birds were observed or heard on a regular basis. These included Mallards, Soras, Canada Geese, Killdeers, and Red-winged Blackbirds. The White-faced Ibis was observed during the early part of the survey.

The following is a summary of the avian species that were observed to specifically inhabit the wetland or pond areas and were noted as present.

4.1.1 Wetlands 1, 2, and 3

The wetland ponds contained large populations of Red-winged Blackbirds. Populations of Red-winged Blackbirds varied throughout the survey but often reached over 50 birds present at one time. Throughout the survey, Wetlands 2 and 3 seemed to contain consistently larger blackbird populations than Wetland 1 (See Appendix D and Appendix E). The ratio of males to females present varied, which is likely related to females incubating the eggs at the nest sites. Red-winged Blackbirds nest above water in cattails or other brush and feed on grass and forb seeds, and invertebrates. The young are fed only insects and adults will have two to three broods per year. They are the most abundant bird in America and migrate south to Costa Rica in the winter. In the wild they have been known to live approximately 16 years.

Soras were heard at all wetland ponds and observed at Wetland 1 and the Sediment Pond. Sora calls were often timed so close together and initiating from different directions that it was concluded that they had to be coming from different nesting locations. Soras build nests in cattails or sedges near the water surface and are a migratory bird that winters in the southern United States or northern South America. Their diet includes aquatic invertebrates or seeds of wetland plants.

A flock of 11 White-faced Ibis' were observed over Wetland 3 in May and also individuals were observed over Wetland 2. This species is known to eat aquatic invertebrates, insects, earthworms, small vertebrates, and occasionally aquatic vegetation. It normally has one brood a year. The White-faced Ibis nests in small colonies and needs wetlands for breeding. This migratory bird winters to the south in northern South America. White-faced Ibis' also were observed on one early May 2005 survey.

Mallards were observed flying over all ponds and a pair was observed flying out of Wetland 1 on one occasion. Mallards will nest on grassy areas close to water and eat aquatic plants, seeds, terrestrial insects, and invertebrates. Ducklings are able to fly after 42 to 60 days. Although there may be resident populations in some areas, mallards will winter south to central Mexico.

Song sparrows were observed or heard on several occasions in wetland pond fringe areas populated with willows. Western Meadow larks were also a noted resident in open pasture areas.

4.1.2 Sediment Pond

The cliffs south of the Sediment Pond contained large breeding populations of Cliff Swallows, which were also observed during the 2005 surveys. In addition to Cliff Swallows, Bank and Violet-green Swallows were also observed during the surveys catching insects over the pond or circling over the pond area.

Mallards were regularly observed flying over the Sediment pond in pairs or as individuals. As described in Section 4.2.3, it is believed that they also nest in the area. The life span of mallards in the wild may exceed 23 years and the pairs observed in the area have potentially established a territory around the pond. Mallards were also observed on the Monticello Municipal Treatment Lagoons north and east of the Sediment Pond.

Canada Geese were found to use the Sediment Pond area and are believed to nest in the area (see Section 4.2.3). Numerous tracks and goose droppings were observed on the trail around the pond and into the willows east of the outlet. Canada Geese usually nest near water and feed on shoots, roots, seeds of grass and sedges, insects, and crustaceans. They return yearly to use the same nest areas over typical life spans of 23 years.

Other non-wetland birds noted in 2006 and 2005 and that frequent or reside in the Sediment Pond area included the Great Horned Owl, American Robin, and Red-tailed Hawks. These species have longevity in the wild of over 10 years and return to known territories that they have established. A Great Horned Owl pair likely breeds in the area and was observed and heard east of the Sediment Pond.

4.2 Results of Nest Surveys and Breeding Observations

Nest surveys were conducted for a period of one hour at each of two locations during mid-morning on May 17, 2006. BTAG members, including an ornithologist who was present on May 17 to collect macroinvertebrate samples, assisted by conducting an informal nest survey at Wetland 1 and located one Sora nest.

4.2.1 Wetland 1

A Sora nest was positively identified in the southwest portion of Wetland 1 at the base of cattail plants. Surveying this pond was not included in the nest survey protocol for 2006 but this finding did corroborate one of the locations where Sora calls had been heard earlier and was near where the two Soras were observed on June 26.

4.2.2 Wetland 3

There were 12 Red-winged Blackbird nests located in Wetland 3. Each nest had between two and five unhatched eggs present, which is consistent with the typical nest size of three to four eggs or occasionally two to six eggs. One nest did have two very recently hatched birds present. The center of the cattail area had not been reached when the assigned 1-hour survey period was over. The central area was virtually impenetrable due to the tight growing habit of the cattails. There was one empty nest that was not identified because there were no eggs present. It was situated closer to the water than the blackbird nests but not at the water level (as would be expected if it was a Sora nest). It was two to three times as deep as the blackbird nests, wider, and set lower on the cattails. Appendix C provides photo documentation of the area surveyed and a typical blackbird nest with unhatched eggs present.

4.2.3 Sediment Pond

No nests were found to be present in the Sediment Pond area. However, while searching for nests, a mallard duckling was flushed from the willow thickets east of the pond. Soon after the duckling was flushed, a female mallard appeared on the pond and began quacking in distress and exhibiting broken-wing behavior. Subsequently, the duckling worked its way through the willows back to the pond and hid in cattails ringing the north edge of the pond, in the opposite direction from the hen, which at that point was swimming to the south area of the pond.

Two female mallards each with six to seven ducklings were observed on the pond during surveys in late June. Two drakes had been observed flying over the pond during that survey as had two pairs of mallards been observed flying over the pond during different survey dates. Field observations indicate that two pairs of mallards were actively nesting in the sediment pond area. The area east of the outlet, densely vegetated with willows and grasses, was likely used for nesting and feeding, and the pond itself provided a quiet and safe water resource for the ducklings. All ducklings observed were potentially one to two weeks old and too small to fly; consequently, it is assumed that they must have been hatched in the area. Mallards typically lay seven to ten eggs but may lay as many as 15 eggs to a nest. Based on observing the two females with individual broods, it is believed that two separate nests were present.

At least one pair of Canada Geese are suspected to breed in the Sediment Pond area. Early in May, two adult geese were observed sitting on the cliff promontories to the east watching the pond area. On May 17 (sunrise survey) two adults and six goslings were observed on the east edge of the pond. The adults were lying on their sides sleeping. Two weeks later, a pair of adults were observed in the grass between the cliffs and south side of the pond. Finally, in June, an adult goose with five goslings was observed quickly leaving a small bench area near the intake while a second adult with six goslings did not have time to leave and lay ‘frozen’ in the grass near the trail. It is unknown if this represented two broods or one brood because nest size could include as many as 10 eggs and adult sexes are difficult to distinguish. It was clear that the goslings were too small to fly and hence must have been bred in the area.

Numerous (possibly over 100) swallow nests were observed on the north-facing cliff faces. As noted in the 2005 report, the colony is located downstream from the sediment pond and on the south side of the canyon. This colony, known to the BTAG since 1997 (DOE, 1998) was not identified as a potential receptor of concern in the current study.

5.0 Discussion

The 2006 avian survey concentrated on identifying duck or other waterfowl use of the wetland and sediment ponds, with the identification of other avian species present of secondary importance. The 2005 survey was tasked with identifying all avian species present. Federal and state protected or sensitive species listed as potentially present were not observed in 2006 or in 2005.

In 2006, mallards were the only waterfowl that were identified at or flying over the pond areas; gadwalls and cinnamon teals were observed at the sewage lagoon ponds. In 2005, mallards, gadwalls, and cinnamon teals were all identified as present at the ponds.

Although no mallard nests were located, based on the presence of two female mallards with six to seven ducklings each at the Sediment Pond, it is assumed that breeding and nesting had occurred in the willows east of the Sediment Pond outlet. On May 17, as previously described, a duckling was flushed and ran into the brush north of the willows; immediately a female mallard appeared on the pond quacking in distress and displaying with a wounded wing. In a later survey, two females were observed on the pond with what appeared to be individual broods. They subsequently disappeared in the willows on the east side of the pond. In one of the last surveys, female mallard quacking could be heard in the creek east of the pond and outlet. Mallard pairs were observed flying over the Sediment Pond and were also noted in the 2005 survey. Mallards nest in association with the presence of open water for rearing their young, which could explain the presumed breeding and nesting in the Sediment Pond area.

As discussed earlier (Section 4.2.3), Canada Geese were also present and appeared to breed and nest in the Sediment Pond area. It is unknown if one or two pair of geese were present and breeding. The 2005 survey also noted the presence of Canada geese.

Sora calls were heard at all pond locations and observed at Wetland 1 and at the Sediment Pond. A Sora nest was identified at Wetland 1. The different song locations at the wetland ponds could indicate that more than one pair did nest and breed at each pond during 2006. The 2005 survey did not record Sora presence at the Sediment Pond.

Wetlands 1, 2, and 3 contained large numbers of Red-winged Blackbirds. Their predominant presence was not surprising as they were noted as present in large numbers in the 2005 survey. Red-winged Blackbirds prefer to breed in wetland pond areas but also utilize other ecological niches, as available. Their successful adaptations have resulted in them being known as the most abundant bird in America.

6.0 Conclusion

No federally listed or state sensitive species were observed at MMTS during the 2006 surveys. Several migratory species were found to be present that utilized the wetland ponds or Sediment Pond and require this type of habitat for breeding and nesting. These species included Canada Geese, Sora, and Mallards. White-faced Ibis' were observed early in the survey and may have

used the ponds as a migratory stopover. Red-winged Blackbirds were prevalent at the three wetland ponds and nesting and breeding activity was obvious; however, they do not depend on the presence of wetland areas for breeding. A pair of Red-tailed Hawks were observed hunting the valley.

The most abundant species present at the wetland ponds was the Red-winged Blackbird. Swallows were noted to continue to utilize nests along the cliffs south of the sediment pond, as were observed in 2005. Mallards and Canada Geese were present at the Sediment Pond, although not in large numbers.

7.0 References

Department of Energy (DOE), 1998. Operable Unit III Remedial Investigation, Volume VII; Project Number MSG-035-0001-00-000, Document Number Q0003300, Grand Junction Office, Grand Junction, CO.

Department of Energy (DOE), 2005. 2005 Avian Wetland Surveys at the Monticello Mill Tailings, Office of Legacy Management, under contract by Lisa Horzepa, Moab UT for SM Stoller under DOE contract number DE-AC01-02GJ79491, dated October 2005.

Ehrlich, P., D.S. Dobkin, and D. Wheye, 1988. The Birder's Handbook, A Field Guide to the Natural History of North American Birds.

Mueller, B.,2006. Personal communications dated August 14, 30, 31, 2006 between Sandra Beranich, Research Scientist, Battelle Memorial Institute, Grand Junction, Colorado and Robert Mueller, Research Scientist, Battelle Memorial Institute, Pacific National Laboratory, Richland, WA.

U. S. Fish and Wildlife Service, 2006. Birds of Conservation Concern, Division of Migratory Bird Management, Salt Lake City, UT.

Utah Department of Natural Resources, Division of Wildlife Resources, Utah Sensitive Species List, dated February 8, 2005 and August 8, 2006.

Appendix A

Map Showing 2006 Survey Locations

Appendix A is not available in electronic format.
Please e-mail lm.records@lm.doe.gov to request the appendix.

Appendix B

Program Directive

This page intentionally left blank

Program Directive MSG 06-02

STATEMENT OF WORK

MONTICELLO MILL TAILINGS SITE
OPERABLE UNIT III BIOMONITORING

2006 WATERFOWL SURVEY

I. Introduction

A visual and auditory survey for ducks will be conducted during May and June 2006 to primarily establish the presence and frequency of duck use of three constructed wetland ponds at the former millsite and of the constructed sediment retention pond located about 1-mile farther east. Although the surveys will focus on ducks, other avian species using the wetlands and sediment pond will be observed and recorded. One survey date will include a survey for duck nesting use of areas surrounding the easternmost wetland on the former millsite identified as wetland 3 and the sediment retention pond. The waterfowl survey conducted under this statement of work is a follow-up to the survey conducted in 2005 and will assist in evaluating base-line conditions. The avian wetland species surveys complement other biomonitoring tasks that include evaluating selenium accumulation in sediment, surface water, and aquatic insects in the wetlands and sediment pond.

II. Background Information

A comprehensive avian wetland survey was conducted between April 20 and August 28 (2005) on a bi-weekly basis. The results of that survey indicated that the most common avian species noted included cliff swallows and the red-winged blackbird; dabbling ducks were present at all pond areas in much lesser numbers. The majority of ducks were observed between April 20 and the end of June. Based on the results of biomonitoring activities conducted in 2005, members of the biological assistance technical group (BTAG) for OU III agreed to conduct a follow-up survey in 2006 to focus on waterfowl (particularly dabbling ducks) but to include notations of other birds casually observed present.

III. Survey Approach

In general, the protocols for the 2006 survey will be the same as those developed for the 2005 survey, as documented in Monticello OU III Program Directive MSG-05-01 and "*Final Report, 2005 Avian Wetland Surveys at the Monticello Mill Tailings Site* (US Department of Energy Office of Legacy Management, October 2005). In 2005, two observation points were identified for each wetland and pond. The 2006 survey will use the same observation locations. Surveys will consist of twice daily observations on alternate weeks for the period of May through June 2006. Field observations will be conducted for 10-15 minutes at each location. The surveys will begin approximately one-half hour before sunrise and again after 6 PM and prior to sunset. Adult and fledgling ducks will be identified as to species and counted. One of the surveys will include a survey for duck nests and eggs around Wetland Pond No.3 and the sedimentation pond. Observations of other birds present will be noted.

Background materials (e.g. protected and migratory species lists) developed for the 2005 survey will be reviewed prior to the 2006 field season. All ducks, nests, and eggs will be noted in a field log. The field survey forms developed for 2005 will be used. Other bird species observed during the duck survey will be noted in a field log. It is anticipated that a summary report of the results of the 2006 survey will be completed within 30 days of the last observation and distributed among the BTAG.

Program Directive

Program/Project MMTS OUIII Post-ROD Biomonitoring **Directive No.** MSG-06-02

Task Order No. ST06-105-05-103

Initiated By: Timothy Bartlett, Site Lead

Affected Documents: MMTS OU III Post-Record of Decision (ROD) Monitoring Plan

Directive Subject: Waterfowl survey at the constructed wetlands and sediment retention pond.

Justification: Waterfowl surveys are components of the OU III biomonitoring program in progress to evaluate selenium accumulation in the wetlands environments at OU III, as required by the Record of Decision for Operable Unit III, signed in May 2004.

Directive: Conduct waterfowl surveys for OU III biomonitoring in accordance with the attached statement of work. The scope of work and methodology was developed in consultation with the biological technical assistance group (BTAG) for OU III biomonitoring.

Protocols and rationale for waterfowl surveys to be conducted under this directive are similar to those established for the avian wetland species survey conducted in 2005 and documented in Monticello OU III Program Directive MSG-05-01 and "*Final Report, 2005 Avian Wetland Surveys at the Monticello Mill Tailings Site*" (DOE Office of Legacy Management, October 2005).

Review and Concurrence:

Farlie Pearl — Farlie Pearl, Project Support QA — Date: 4/17/06

T E Bartlett — Timothy Bartlett, Site Manager — Date: 4/17/06

Task Order Manager Approval to Issue:

G E A — Clay Carpenter, Manager (Land Management)

Effective Date: April 14, 2006 **Expiration Date:** September 30, 2006

Distribution: w/ Attachments
Task Order Managers Directive Log
Jalane Glasgow - Record File # 2.7
Farlie Pearl – ~~DOE~~ Information Repository (2 copies)
Holders of all affected documents

Appendix C

Photos

This page intentionally left blank

Overview of Wetland Pond 3 looking to southeast. In early May, standing water was present surrounding the wetland. By mid-May, standing water was present on the edge of the cattails on the north side of the wetland and in central areas. By the end of June, the majority of the perimeter areas did not have any degree of standing water present. The darker vegetation shown in the middle of the photo is located in the dense central area. Photo taken 5/17/2006.

Typical Red-winged Blackbird nest in Wetland Pond 3. Water level is 16-18-inches deep. Nest construction shown woven around the cattails, is typical of the nests observed. This nest was found just outside the dense center of cattails in the pond. (5/17/2006)

Appendix D

Compiled Results of 2006 Avian Surveys by Species

This page intentionally left blank

Compiled Results of 2006 Avian Surveys by Species

Common Name	Dates of Surveys										2005
	05/04	05/05	05/16	05/17	05/30	05/31	06/12	06/13	06/26	06/27	
DUCKS OR DUCK LIKE BIRDS				**P**, 1 FO to E. later 1 pr. FO E to W; **1**, 1 flew out of center of pond.		**SL**, 1 pr.					
American Coot				**SL**							
Eared Grebe				**SL**							
*Gadwall											*P
Greater Scaup				**SL**							
***Mallard**	**2**, pair FO; **1**, pair. later saw 2 pair circling.	**P,** saw 2 pair; **2,** 1 drake FO.	**2**, 1 pr. in creek betw. ponds 2 & 3; **3**, 1 pair S. side pond; **P**, 1 pr FO, 2 pr. FO.	**P**, 1 FO later saw 1 pr. FO to E, then single female FO to E; **1**, 1 pr. flew out of pond; **SL**	**1**, 1 FO; **2**, 1 drake FO W to pond 1; **P**, 2 pr. in pond fly to E; pr drakes fly to E.	**P**, hen w/ group 6 ducklings, 1 pr adults FO to W and 4 FO to E; **SL**, 1 pr. hens; 2 pr.	**P**, 1 hen w/group 7ducklings	**P**, 1pair drakes flew off pond to S, 2 pr. hens on pond w/13+ ducklings **2**, 1 flew over W – E.	**P**, 2 immatr on pond, 2 hens fly in after we left, 1 drake flew in then left.	**P**,indiv. FO E – W then landed in willows to E of pond.	
Northern Shoveler						**SL**					
Red Head						**SL**					
Teals							**P**, 6 FO				
Blue- winged Teal				**SL**							
***Cinnamon Teal**						**SL**, 3 drakes w/1 hen					
Green-Winged Teal			**P** 1 FO								

Bolded name refers to birds that were observed or heard in 2006 surveys; * in front of name refers to birds observed or heard in 2005; *italicized* names of birds refers to birds DOE considered a migratory protected bird, bird of conservation concern, or partners in flight priority species (Utah). H = heard only, with positive song identification; FO = bird flew overhead or nearby; SL = Monticello sewage lagoons. First bolded number or letter refers to location (e.g. Wetland Pond = **1,** Sediment Pond = **P**). Number in parenthesis refers to relative abundance noted in field: 1 = few (1-5); 2 = low abundance (6-20); 3 = moderate abundance (21-50); 4 = high abundance (50 or more), if not in parenthesis, number is actual count.

Compiled Results of 2006 Avian Surveys by Species (continued)

Common Name	Dates of Surveys										2005
	05/04	05/05	05/16	05/17	05/30	05/31	06/12	06/13	06/26	06/27	
WETLAND OR SHORE BIRDS											
***Canada Goose**		**P**, 2 pairs FO & land on promen-tories on cliffs to S.		**P**, M+F + 6 goslings E. shore; **SL.**	**P**, pr in grass S side.	**SL**, several pr. w/ goslings.	**P**, poss 2 families, 2 adults w/ 5-6 goslings each.		**P**, saw fresh tracks N side pond.		
*Common Snipe											*1, 2, 3
*Great Blue Heron											*3
***Killdeer**				**3,** 1indiv. **SL**.			**3**, 1 FO.				
***Red-winged Blackbird**	**3**, (4); **2**, (4); **1**, (3).	**P**, (1); **3**, (2); **2**, (3) **1**, (3).	**1**, (2); **2**, (4); **3**, (3); **P**, (1).	**P**, (1) in cattails W side pond; **2**, (4); **1**, (2); **3**, (2).	**3**, (2); **1**, (2); **2**, (2); **P**, H.	**2**, (3); **3**, (2); **1**, (2); **SL**.	**2**, (2); **P**, (2); **1**, (2); **3**, (3).	**3**, (3); **1**, (2); **P**, (2); **2**, (2).	**3**, (3); **1**, (3); **P**, (2); **2,** (3).	**1**, (3); **2**, (4); **P**, (1); **3**, (1).	
***Sora**	**P**, (1) one indiv. feeding on E. side of shore; **2**, H; **1**, H.	**2**, H only; **1**, H.	**1**, H; **2**, H; **3**, H.	**P**, H; **2**, H on E. side pond then on W side; **1**, H; **3**, H.	**3**, H; **1**, H; **2**, H.	**2**, H from N/ S sides; **3**, H; **1**, H.	**2**, H; **1**, H at least 2 loc; **3**, H.	**3**, H; **1**, H from 2 loc.; **2**, H 2 loc.	**3**, H; **1**, H calls then saw 1 on W-SW edge followed by 2nd Sora; **2**, poss H.	**1**, H; **2**, H; **P**, ? H; **3**, H from 2 loc.	.
*Spotted Sandpiper											*3
*Yellow-headed Blackbird											*2, 3
***White-faced Ibis**	**3**, (1); **2** (2), counted 11.		**3**, 1 FO to W.	**P**, FO & circle from W To E.							

Bolded name refers to birds that were observed or heard in 2006 surveys; * in front of name refers to birds observed or heard in 2005; *italicized* names of birds refers to birds DOE considered a migratory protected bird, bird of conservation concern, or partners in flight priority species (Utah). H = heard only, with positive song identification; FO = bird flew overhead or nearby; SL = Monticello sewage lagoons. First bolded number or letter refers to location (e.g. Wetland Pond = **1,** Sediment Pond = **P**). Number in parenthesis refers to relative abundance noted in field: 1 = few (1-5); 2 = low abundance (6-20); 3 = moderate abundance (21-50); 4 = high abundance (50 or more), if not in parenthesis, number is actual count.

Compiled Results of 2006 Avian Surveys by Species (continued)

Common Name	Dates of Surveys										2005
	05/04	05/05	05/16	05/17	05/30	05/31	06/12	06/13	06/26	06/27	
HAWKS, OWLS, VULTURES		**2**, uniden pr hawks hunting E-W and N of wetland.									
*American Kestrel											*1, 2, 3
***Common Nighthawk**					**P**, ? (1).						*1, 2, P
*Cooper's Hawk											*2
***Great Horned Owl**			**P**, H to E.	**P**, 1 adult w/1immatr.	**P**, H				**P**, H.		
***Red-tailed Hawk**							**P**, 1pr hunting slope to N.	**2**, FO E to W.	**P**, S/H on dead tree in dist. to E and S.		
***Turkey Vulture**		**1**, poss. 1 FO to S.			**3**, 1 FO E-W and grp circl W of Hwy. 191.	**1**, (2) circling overhead.	**2**, (1) hunting hillside to N.	**2**, (3) large flock 30 birds fr. W hang out to N.	**1**, FO to N.	**P**, (1).	
SWALLOWS	**3**, (1); **2**, (3).	**P**, (3).	**1**, (1); **2**, (1) FO to N.	**P**, (3-4); **SL**.		**P**, (3); **SL**.					
***Bank Swallow**			**3**, <10 FO; **P** (1).		**2**, 2 FO to E; **P**, (3).		**2**, (2) FO. wetland; **P**, (2).	**P**, (3); **2**, (1).	**3**, (1); **P**, (3).	**P**, (4) above cliffs above pond.	
***Barn Swallow**			**3**, 2-3 FO.								
***Cliff Swallow**		**2**, FO to S.	**P**.								
*Northern Rough-Winged Swallow											*1, 2, 3

Bolded name refers to birds that were observed or heard in 2006 surveys; * in front of name refers to birds observed or heard in 2005; *italicized* names of birds refers to birds DOE considered a migratory protected bird, bird of conservation concern, or partners in flight priority species (Utah). H = heard only, with positive song identification; FO = bird flew overhead or nearby; SL = Monticello sewage lagoons. First bolded number or letter refers to location (e.g. Wetland Pond = **1,** Sediment Pond = **P**). Number in parenthesis refers to relative abundance noted in field: 1 = few (1-5); 2 = low abundance (6-20); 3 = moderate abundance (21-50); 4 = high abundance (50 or more), if not in parenthesis, number is actual count.

Compiled Results of 2006 Avian Surveys by Species (continued)

Common Name	Dates of Surveys										2005
	05/04	05/05	05/16	05/17	05/30	05/31	06/12	06/13	06/26	06/27	
*Tree Swallow											*2, 3
***Violet-green Swallow**			**P**, 2 FO.				P, (1).				
COMMON BIRDS											
***American Crow**		**P**, 1 FO; **2**, 1 FO.									
***Black-billed Magpie**		**P**, (1).	**P**, 3 FO.	**P**, H/S FO S to W.	**P**, 1 on cliff top to S.	**P**, (1); 1, FO S-N.	**P**, FO N-S across valley.		**P**, 1 in trees to S.	**P**, (1).	
***Brown-headed Cowbird**	**3**, (1) FO.										
***Common Raven**	**3** (?), in trees to south.	**3**, (1) FO to N.	**1**, (1); **2**, H to N and W.	**P**, (1) FO EES; **2**, pr FO N to S; **2**, 1 pr, FO N to S.	**3**, 1 FO.	**2**, (1); **P**, 1 FO; **3**, H in trees to S; **1**, FO E-W.		**3**, H in trees S & E; **1**, FO E-W; **P**, (1); **2**, (1).	**3**, 3 FO S-N.	**2**, 4 FO to E; **P**, (1); **3**, H in trees to S.	
Boat-tailed Grackle	**3**, (1).		**3**, ? (1).	**2**, 1 FO N to S.							
*Great-tailed Grackle											*1, 2, 3
SPARROWS			**1**, (1).								
*Chipping Sparrow											*1, 2, 3
*Lark Sparrow											*P
***Song Sparrow**			**1**, (1); **3**, sev. H in cattails; **P**, H/S.	**P**, H; **2**, (1)	**1**, 1 in willows W. side pond.		**1**?		**1**, (1); **2**, H.	**2**, (1).	
*Vesper Sparrow											*2, 3
SONG BIRDS		**1**, unident.									
*American Goldfinch											*1
*Lesser Goldfinch											*1, 3

Bolded name refers to birds that were observed or heard in 2006 surveys; * in front of name refers to birds observed or heard in 2005; *italicized* names of birds refers to birds considered a migratory protected bird, bird of conservation concern, or partners in flight priority species (Utah). H = heard only, with positive song identification; FO = bird flew overhead or nearby; SL = Monticello sewage lagoons. First bolded number or letter refers to location (e.g. Wetland Pond **1,** Sediment Pond = **P**). Number in parenthesis refers to relative abundance noted in field: 1 = few (1-5); 2 = low abundance (6-20); 3 = moderate abundance (21-50); 4 = high abundance (50 or more), if not in parenthesis, number is actual count.

Compiled Results of 2006 Avian Surveys by Species (continued)

Common Name	Dates of Surveys										2005
	05/04	05/05	05/16	05/17	05/30	05/31	06/12	06/13	06/26	06/27	
***Western Meadowlark**		**3**, H 1; **1**, H.	**2**, (1) along rd. to wetland 3; **3**, H.	**2**, 1 in bush to N.		**3**, H; **1**, (1).		**P**, H 1; **2**, H 1.		**1**, H.	
Warbler (Type Unknown)			**P**, H.								
*Bk-throated Gray Warbler											*P
*McGillivray's Warbler											*P
*Wilson's Warbler											*P
*Yellow-rumped W.											*P
*Yellow Warbler											*P`
MISC BIRDS OBSERVED IN 2006											
***American Robin**		**P** 1 male.	**P**, male to N of pond.	**P**, 1 in trees to N of pond.					**P**, 1 on rd by gate.	**P**, 1 W of pond, S of rd.	
***Canyon Wren**		**P**, H (1)		**P**, poss 1.							
Horned Lark								**1**, (1).			
Hummingbird (Type Unknown)			**1**, 1 FO.			**2**, FO E-W; **1**, (1).		**1**, (1).		**2**, (1).	
***Mountain Bluebird**							**P**, 1 in willows W side.				
***Mourning Dove**					**P**, H several.	**3**, (1).	**3**, H 1 in trees to S.		**P**, saw 3.		
Nuthatch							**P**, poss. Along rd.				
Woodpecker (Type Unknown)		**2**, H - 1 in trees to N.									

Bolded name refers to birds that were observed or heard in 2006 surveys; * in front of name refers to birds observed or heard in 2005; *italicized* names of birds refers to birds DOE considered a migratory protected bird, bird of conservation concern, or partners in flight priority species (Utah). H = heard only, with positive song identification; FO = bird flew overhead or nearby; SL = Monticello sewage lagoons. First bolded number or letter refers to location (e.g. Wetland Pond = **1,** Sediment Pond = **P**). Number in parenthesis refers to relative abundance noted in field: 1 = few (1-5); 2 = low abundance (6-20); 3 = moderate abundance (21-50); 4 = high abundance (50 or more), if not in parenthesis, number is actual count.

Compiled Results of 2006 Avian Surveys by Species (concluded)

Common Name	Dates of Surveys										2005
	05/04	05/05	05/16	05/17	05/30	05/31	06/12	06/13	06/26	06/27	
MISC BIRDS OBSERVED ONLY IN 2005											
Black-chinned Hummingbird											1, 2, P.
Rufous Hummingbird											2
Northern Flicker											P
Ash-throated Flycatcher											P
Cordilleran Flycatcher											1
Olive-sided Flycatcher											P
Western Wood Pewee											P
Black Phoebe											P
Says Phoebe											1, 2, 3, P
Scrub Jay											2, P
Bushtit											P
White-breasted Nuthatch											P
Bewick's Wren											P
European Starling											3
Western Tanager											P
Black-headed Grosbeak											P
Blue Grosbeak											P
Lazuli Bunting											1
Spotted Towhee											P
House Finch											2

Bolded name refers to birds that were observed or heard in 2006 surveys; * in front of name refers to birds observed or heard in 2005; *italicized* names of birds refers to birds DOE considered a migratory protected bird, bird of conservation concern, or partners in flight priority species (Utah). H = heard only, with positive song identification; FO = bird flew overhead or nearby; SL = Monticello sewage lagoons. First bolded number or letter refers to location (e.g. Wetland Pond = **1,** Sediment Pond = **P**). Number in parenthesis refers to relative abundance noted in field: 1 = few (1-5); 2 = low abundance (6-20); 3 = moderate abundance (21-50); 4 = high abundance (50 or more), if not in parenthesis, number is actual count.

Appendix E

Summary of 2006 Surveys
Avian Species Observed by Location

This page intentionally left blank

Summary of 2006 Surveys Avian Species Observed by Location

Wetland Pond 1			
Area Surveyed/Time of Survey		**Date**	**Description**
PM	Sora	May 4	Heard only; possibly more than one location
8:00 – 8:22 AM		May 5	Heard only
6:03 – 6:33 PM		May 16	Heard only
7:20 – 7:45 AM		May 17	Heard 9 times
7:00 – 7:25 PM		May 30	Heard only
7:30 – 7:55 AM		May 31	Heard only, 5 distinct songs
8:01 – 8:21 PM		June 12	Heard at least 2 locations
6:00 – 6:30 AM		June 13	Heard from 2 locations (calls too close together to be one bird); north side location multiple calls (5 times)
6:54 – 7:25 PM		June 26	Saw 2 individuals; heard 4 calls then saw one individual wading and feeding on W to SW edge of pond; 2nd sora came out after 5 minutes and was chased away by 1st sora.
5:31 – 5:52 AM		June 27	Heard about 7 different calls; 2 separate locations.
PM	Red-winged Blackbird	May 4	Actual estimated present: 20-30
8:00 – 8:22 AM		May 5	More than 20, less than 50
6:03 – 6:33 PM		May 16	20-30, about ½ males ½ females
7:20 – 7:45 AM		May 17	6-20 present
7:00 – 7:25 PM		May 30	10-15 present; heard lots of song
7:30 – 7:55 AM		May 31	6-10
8:01 – 8:21 PM		June 12	6-20
6:00 – 6:30 AM		June 13	Estimate 20 individuals
6:54 – 7:25 PM		June 26	20-50 individuals, mixed males/females, some immature
5:31 – 5:52 AM		June 27	20 to <50 individuals
PM	Mallard	May 4	1 pair took off then later saw 2 pr. circling
7:20 – 7:45 AM		May 17	1 pair flew out of wetland pond
7:00 – 7:25 PM		May 30	1 indiv. came out of south and flew over E part of pond then continued
7:00 – 7:25 PM	Unidentified duck	May 30	Possibly teal, flew out of center of pond from cattails and few to East.
8:00 – 8:22 AM	Western Meadowlark	May 5	Heard
7:30 – 7:55 AM		May 31	1 individual
5:31 – 5:52 AM		June 27	1 individual
8:00 – 8:22 AM	Song Sparrow	May 5	1 individual (possibly not song sparrow)
6:03 – 6:33 PM		May 16	2 individuals, possibly same bird seen twice
7:00 – 7:25 PM		May 30	1 individual in willows, west side pond
8:01 – 8:21 PM		June 12	Possible identification
8:00 – 8:22 AM	Turkey Vulture	May 5	Flying south
7:30 – 7:55 AM		May 31	Group of 8 circling overhead
6:03 – 6:33 PM	Raven	May 16	1 individual
7:30 – 7:55 AM		May 31	3 ravens flying east to west
6:00 – 6:30 AM		June 13	1 individual flying east to west
6:03 – 6:33 PM	Swallow	May 16	1 individual, type not identified
7:20 – 7:45 AM	Owl	May 17	Heard one, type unidentified
7:30 – 7:55 AM	Magpie	May 31	1 individual flying south to north
7:30 – 7:55 AM	Hummingbird	May 31	1 individual, type not identified
6:00 – 6:30 AM		June 13	1 individual type not identified
6:00 – 6:30 AM	Horned lark	June 13	1 individual in field north of road near pond

Summary of 2006 Surveys Avian Species Observed by Location

Wetland Pond 2			
Area Surveyed/Time Of Survey		**Date**	**Description**
PM	Sora	May 4	Heard in cattails from north and south sides
7:24 – 7:45 AM		May 5	Heard only
6:30 – 7:00 PM		May 16	Heard from possibly east side of pond
6:37 – 7:15 AM		May 17	Heard east and west sides of pond
7:30 – 7:55 PM		May 30	Heard multiple times: 6-8 calls
5:35 – 6:00 AM		May 31	Heard 2 times coming from north and south sides; suspect 2 individuals
6:30 – 7:00 PM		June 12	Heard 1 individual
7:20 – 7:50 AM		June 13	Heard 7 times, calls from 2 locations
8:43 – 9PM		June 26	Possible call
5:50 – 6:25 AM		June 27	Heard only
PM	Red-winged Blackbird	May 4	More than 50 blackbirds
7:24 – 7:45 AM		May 5	More than 20 less than 50
6:30 – 7:00 PM		May 16	About 100 males, 10 females
6:35 – 7:15 AM		May 17	Over 50 in cattails
7:30 – 7:55 PM		May 30	10-12 individuals
5:35 – 6:00 AM		May 31	50 individuals
6:30 – 7:00 PM		June 12	About 20 individuals
7:20 – 7:50 AM		June 13	6-20 individuals
8:43 – 9:00 PM		June 26	More than 50 present
5:50 – 6:25 AM		June 27	More than 50 present
PM	Mallard	May 4	1 pair flew over area
7:24 – 7:45 AM		May 5	Drake flew over
6:30 – 7:00 PM		May 16	Pair mallards in creek between ponds 2 and 3
7:30 – 7:55 PM		May 30	2 drakes seen flying west at separate times; possibly same bird
7:20 – 7:50 AM		June 13	1 duck (possibly mallard) flew over going west to east
PM	White-faced Ibis	May 4	11 individuals; flock of 10 fly over then returned; 1 individual flew out of cattails to join them in air; group circled then 8 landed in center of cattails and other 3 were continuing to circle until we left.
PM	Swallows	May 4	21-50 could not identify type
7:24 – 7:45 AM	Cliff Swallows	May 5	Group flew over to south
6:30 –7:00 PM	Cliff Swallows	May 16	2 individuals flew overhead to north
7:30 – 7:55 PM	Bank Swallows	May 30	2 individuals flying to east
6:30 –7:00 PM		June 12	6-20, flying over wetland and to north up bank of other side
7:20 – 7:50 AM		June 13	3 individuals
7:24 – 7:45 AM	Hawks	May 5	Pair; 1 individual much larger w/white band on tail darker brown on top; smaller one more of blue-gray color. Hunting as pair on hillside slopes north of the pond.
7:20 – 7:50 AM	Red-tailed hawk	June 13	1 individual flying E to W near Wetland Pond 1
7:24 – 7:45 AM	Woodpecker	May 5	Heard in trees to north
6:30 – 7:00 PM	Raven	May 16	2 sightings, one in bush to west, heard one to north
6:37 – 7:15 AM		May 17	1 pair flew S to N, 1 pair flew N to S, misc. pair flew over.
5:35 – 6:00 AM		May 31	1 flew overhead to south
7:20 – 7:50 AM		June 13	2 individuals to north
5:50 – 6:25 AM		June 27	Several: 4 flying E to W north of pond
6:30 – 7:00 PM	Western Meadowlark	May 16	Heard and saw 1 along road to pond 3
6:37 – 7:15 AM		May 17	1 in bush to north
7:20 – 7:50 AM		June 13	Heard 1
6:30 – 7:00 PM	Hummingbird	May 16	1 individual flew over
5:35 – 6 :00 AM		May 31	1 individual fly E to W

Wetland Pond 2			
Area Surveyed/Time Of Survey		**Date**	**Description**
5:50 – 6:25 AM	Hummingbird	June 27	1 individual
6:37 – 7:15 AM	Song Sparrow	May 17	1 individual
8:43 – 9:00 PM		June 26	Heard one
5:50 – 6:25 AM		June 27	1 individual in willows in outlet
6:37 – 7:15 AM	Boat-tailed Grackle	May 17	1 individual fly over N to S
6:30 – 7:00 PM	Turkey Vulture	June 12	2 individuals hunting hillside to north
7:20 – 7:50 AM		June 13	30 individuals; came out of west, large flock hung out on nest to north
6:30 – 7:00 PM	Blackbirds?	June 12	20 in flock of unidentified birds, not quite black, smaller than adult blackbirds, possibly immature

Summary of 2006 Surveys Avian Species Observed by Location

Wetland Pond 3			
Area Surveyed/Time Of Survey		**Date**	**Description**
7:15 – 7:42 PM	Sora	May 16	Heard
8:00 – 8:30 AM		May 17	Heard 3 different times
6:22 – 6:48 PM		May 30	Heard call 2 times, think 1 location
6:55 – 7:25 AM		May 31	Heard 6 individual calls
8:30 – 8:50 PM		June 12	Heard once
5:30 – 5:55 AM		June 13	Heard 7 calls to NW part of pond
6:20 – 6:50 PM		June 26	Heard 6 distinct calls
7:40 – 8:07 AM		June 27	Heard at least 7 calls, 2 locations on N and S sides
PM	Red-winged Blackbird	May 4	More than 50, males and females
6:55 – 7:20 AM		May 5	10 count
7:15 – 7:42 PM		May 16	20-50 in rushes, male and female
8:00 – 8:30 AM		May 17	6-20
6:22 – 6:48 PM		May 30	10-15, mixed males/females
6:55 – 7:25 AM		May 31	12 in cattails
8:30 – 8:50 PM		June 12	20-30
5:30 – 5:55 AM		June 13	20-30, seeing mostly male
6:20 – 6:50 PM		June 26	20+ about even numbers females/males
7:40 – 8:07 AM		June 27	Present, but number not recorded
7:15 – 7:42 PM	Mallard	May 16	1 pair on south side of pond
PM	White-faced Ibis	May 4	2 standing in cattails on north side
7:15 – 7:42 PM		May 16	3 flew over to west
8:00 – 8:30 AM	Killdeer	May 17	1 present on south side creek
8:30 – 8:50 PM		June 12	1 fly over
PM	Boat-tailed Grackle	May 4	2 present
7:15 – 7:42 PM		May 16	1 possibly boat-tailed present
PM	Swallows	May 4	Less than 5 present
7:15 – 7:42 PM	Bank swallows	May 16	2-3 flew over, then separate larger group (less than 10) flew over
6:20 – 6:50 PM	Bank or Violet-green Swallows	June 26	Less than 5
PM	Brown-headed Cowbird	May 4	1 flew over
	Turkey Vulture	May 30	1 indiv. fly over E to W and N of pond
6:55 - 7:20 AM	Western Meadowlark	May 5	Heard only
7:15 – 7:42 PM		May 16	Heard only
6:22 – 6:48 PM		May 30	Heard only
6:55 – 7:25 AM		May 31	Heard only
PM	Common Raven	May 4	In far trees to south
6:55 - 7:20 AM		May 5	1 individual flew over to N
6:22 – 6:48 PM		May 30	1 individual flew over to south
6:55 – 7:25 AM		May 31	Unknown number in trees to south
5:30 – 5:55 AM		June 13	Heard in trees to south and east
6:20 – 6:50 PM		June 26	3 individuals flying N from trees to S
7:40 – 8:07 AM		June 27	Heard in trees to south
7:15 - 7:42	Song Sparrow	May 16	Several in cattails to south, nest in willows
6:22 – 6:48 PM	Mourning Dove	May 30	Pair flew over to north
6:55 – 7:25 AM		May 31	1 individual flew over to north
8:30 – 8:50 PM		June 12	Heard in trees to south

Summary of 2006 Surveys Avian Species Observed by Location

Sediment Pond			
Area Surveyed/Time Of Survey		**Date**	**Description**
6:40 PM	Sora	May 4	Saw sora feeding on east side of pond between shoreline and cattails
5:40 – 6:22 AM		May 17	Heard only
6:35 – 7:30 AM		June 27	Possible sighting of sora from cliffs above
6:16 – 6:45AM	Mallard	May 5	2 pair
8:05 – 8:30 PM		May 16	1 pair flew over, then 2 pair flew over, 1 pair north to south, 1 pair east to west
5:40 – 6:22 AM		May 17	Several individuals and pairs fly over, also an unidentified pair of ducks that might have been mallards; directions of flights were always E-W or W to E; during later nest survey saw duckling flushed and end up in pond with female mallard
8:10 – 8:40 PM		May 30	Pair drakes flying E, second pair in pond, fly to East
6:10 – 6:40 AM		May 31	On arrival see 6 ducklings in pond take cover, heard and saw female land in pond quacking (for babies), then 2 mallards fly over to W and 4 ducks fly to E.
7:10 – 7:40 PM		June 12	1 female and 7 baby ducks
6:35 – 7:05 AM		June 13	Pair males flew off pond to south upon arrival, pair of females on pond with 13 (or more) baby ducks in 2 groups
7:40 – 8:30 PM		June 26	2 baby ducks swimming on pond, 2 females flew in after we left; 1 drake flew in after females and left before landing.
6:35 – 7:30 AM		June 27	1 individual flew from E to W, circled and landed in willows to E
	Teal	May 16	1 Green teal flew over
7:10 – 7:40 PM		June 12	1 pair flew to east over pond, also flock of about 6 teals
6:16 – 6:45 AM	Canada Goose	May 5	2 pair watching from promontories on cliffs facing pond
5:40 – 6:22 AM		May 17	1 male, 1 female, 6 goslings sleeping on east shore
8:10 – 8:40 PM		May 30	2 pair adults in grass by cliffs, south side of pond
7:10 – 7:40 PM		June 12	Possibly 2 families; parked car further out to surprise any birds present; saw 1 adult w/5 goslings immediately leave area west of inlet and 1 adult with 6 goslings stayed in place between trail and inlet on west side.
7:40 – 8:30 PM		June 26	Did not see geese but observed many fresh geese tracks on trail and into cattails to east of pond.
PM	Swallows	May 4	21-50, majority cliff swallows circling in area; many catching bugs off surface of pond
6:16 – 6:45 AM		May 5	More than 20 circling above
8:05 – 8:30 PM		May 16	Cliff, bank, Violet-greens circling
5:40 – 6:22 AM		May 17	50 or more circling
8:10 – 8:40 PM		May 30	30 bank/cliff swallows overhead circling
6:10 – 6:40 AM		May 31	Est. 30, mostly bank, in trees to south
7:10 – 7:40 PM		June 12	Est. 15 bank swallows and several Violet-Green swallows
6:35 – 7:05 AM		June 13	21-50 bank swallows
7:40 – 8:30 PM		June 26	20-50 bank and cliff swallows
6:35 – 7:30 AM		June 27	More than 50 bank/cliff swallows
6:16 – 6:45 AM	Red-winged Blackbird	May 5	5 individuals on west side
8:05 – 8:30 PM		May 16	3 individuals and heard one to North
5:40 – 6:22 AM		May 17	Heard and saw several in cattails to W of pond
8:10 – 8:40 PM		May 30	Heard 1
7:10 – 7:40 PM		June 12	Less than 20
6:35 – 7:05 AM		June 13	6-20
7:40 – 8:30 PM		June 26	Less than 10

Sediment Pond			
Area Surveyed/Time Of Survey		**Date**	**Description**
6:35 – 7:30 AM	Red-winged Blackbird	June 27	1 individual
6:16 – 6:45 AM	Black-billed Magpie	May 5	2 along cliffs to south
8:05 – 8:30 PM		May 16	3 flew over
5:40 – 6:22 AM		May 17	Heard from S flying to W
8:10 – 8:40 PM		May 30	1 on S cliff tops, flew to N
6:10 – 6:40 AM		May 31	1 in trees to S
7:10 – 7:40 PM		June 12	1 flying N to S in trees across valley
7:40 – 8:30 PM		June 26	1 to S in trees
6:35 – 7:30 AM		June 27	1 individual
8:05 – 8:30 PM	Great Horned Owl	May 16	Heard to east
5:40 – 6:22 AM		May 17	Baby and adult in cliff alcove to south
8:10 – 8:40 PM		May 30	Heard only
7:40 – 8:30 PM		June 26	Heard only
8:05 – 8:30 PM	Song Sparrow	May 16	Heard and saw
5:40 – 6:22 AM		May 17	Heard and saw several to W and on N of pond
7:10 – 7:40 PM	Red-tailed Hawk	June 12	1 pair hunting above slope to N of pond
7:40 – 8:30 PM	Hawk	June 26	1 on dead tree at very E edge of valley
8:05 – 8:30 PM	American Robin	May 16	1 in trees on N side of pond and N of trail
5:40 – 6:22 AM		May 17	1 in trees on N side of pond
7:40 – 8:30 PM		June 26	1 male on N side of road
6:35 – 7:30 AM		June 27	1 male on S side of road and W of pond
6:16 – 6:45 AM	Canyon Wren	May 5	Heard only
5:40 – 6:22 AM		May 17	Possible canyon wren
5:40 – 6:22 AM	Common Raven	May 17	4 flew over
6:10 – 6:40 AM		May 31	1 flew over
6:35 – 7:05 AM		June 13	2 individuals
6:35 – 7:30 AM		June 27	1 above pond to south
8:05 – 8:30 PM	Bat	May 16	1 hunting over pond
5:40 – 6:22 AM	White-faced Ibis	May 17	1 individual circled overhead from west to east
8:05 – 8:30 PM	Warbler	May 16	Heard only
8:10 – 8:40 PM	Possible Night Hawk	May 30	Observed flying with swallows
7:10 – 7:40 PM	Nuthatch	June 12	1 possible along road
6:35 – 7:05 AM	Western Meadowlark	June 13	Heard only
7:40 – 8:30 PM	Mourning Dove	June 26	3 individuals fly off W side of road
6:35 – 7:30 AM	Turkey Vulture	June 27	1 individual

Appendix F

Common and Species Names of Birds Present

This page intentionally left blank

Common and Species names of identified birds present during 2006 and 2005 surveys.

Species		2006 Location	2005 Location *	2005 Breeding[+] Location*
Great Blue Heron	*Ardea herodias*		3	
White-faced Ibis	*Plegadis chihi*	2, 3, P	1 2 3	
Canada Goose	*Branta canadensis*	P	3 P	
Mallard	*Anas platyrhynchos*	1, 2, 3, P	1 2 3 P	B, 3
Cinnamon Teal	*Anas cyanoptera*		1 2 3	
Gadwall	*Anas strepera*		P	B, P
Turkey Vulture	*Cathartes aura*	1,2,3,P	1 2 3 P	
Cooper's Hawk	*Accipiter cooperli*		2	
Red-tailed Hawk	*Buteo jamaicensis*	2, P	P	
American Kestrel	*Falco sparverius*		1 2 3	
Sora	*Porzana carolina*	1, P	1 2 3	B, 1 2 3
Killdeer	*Charadrius vociferus*	3	3	B?, 3
Spotted Sandpiper	*Actitis macularia*		3	
Common Snipe	*Gallinago gallinago*		1 2 3	
Mourning Dove	*Zenaida macroura*	3, P	1 2 3 P	
Great Horned Owl	*Bubo virginianus*	P	P	B?, P
Common Nighthawk	*Chordeiles minor*	P?	1 2 P	
Black-chinned Hummingbird	*Archilochus alexandri*		1 2 P	
Rufous Hummingbird	*Selasphorus rufus*		2	
Northern (Red-shafted) Flicker	*Colaptes auratus*		P	
Olive-sided Flycatcher	*Contopus borealis*		P	
Cordilleran Flycatcher	*Empidonax occidentalis*		1	
Western Wood-pewee	*Contopus sordidulus*		P	
Black Phoebe	*Sayornis nigricans*		P	
Say's Phoebe	*Sayornis saya*		1 2 3 P	
Ash-throated Flycatcher	*Myiarchus cinerascens*		P	
Tree Swallow	*Tachycineta bicolor*		2 3	
Violet-green Swallow	*Tachycineta thalassina*	P	1 2 3 P	
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*		1 2 3 P	
Bank Swallow	*Riparia riparia*	2, 3, P	2	
Cliff Swallow	*Hirundo pyrrhonota*	2, P	1 2 3 P	B, P
Barn Swallow	*Hirundo rustica*	3	1 2 3	
Scrub Jay	*Aphelocoma coerulescens*		2 P	
Black-billed Magpie	*Pica pica*	1, P	1 2 P	
American Crow	*Corvus brachyrhynchos*	2, P	1 3	
Common Raven	*Corvus corax*	1,2,3,P	1 2 3 P	
Bushtit	*Psaltriparus minimus*		P	
White-breasted Nuthatch	*Sitta carolinensis*		P	
Canyon Wren	*Catherpesmexicanus*	P	P	
Bewick's Wren	*Thryomanes bewickii*		P	
Mountain Bluebird	*Sialia currucoides*	P	3	
American Robin	*Turdus migratorius*	P	P	B, P
European Starling	*Sturnus vulgaris*		3	
Yellow Warbler	*Dendrocia petechia*		P	
Yellow-rumped Warbler	*Dendrocia coronata*		P	
Black-throated Gray Warbler	*Dendrocia nigrescens*		P	
MacGillivray's Warbler	*Oporonis tolmiei*		P	
Wilson's Warbler	*Wilsonia pusilla*		P	
Western Tanager	*Piranga ludoviciana*		P	
Black-headed Grosbeak	*Pheucticus melanocephalus*		P	
Blue Grosbeak	*Guiraca caerulea*		P	
Lazuli Bunting	*Passerina amoena*		1	
Spotted Towhee	*Pipilo erythrophthalmus*		P	
Chipping Sparrow	*Spizella passerina*		1 2 3	

Species		2006 Location	2005 Location *	2005 Breeding[+] Location*
Vesper Sparrow	*Pooecetes gramineus*		2 3	
Lark Sparrow	*Chondestes grammacus*		P	
Song Sparrow	*Melospiza melodia*	1, 2, 3, P	1 2 3 P	B, 2 P
Red-winged Blackbird	*Agelaius phoeniceus*	1, 2, 3, P	1 2 3 P	B, 1 2 3
Western Meadowlark	*Sternella neglecta*	1, 2, 3, p	1 2 3	B, 3
Yellow-headed Blackbird	*Xanthocephalus xanthocephalus*		2 3	
Brewer's Blackbird	*Euphagus cyanocephalus*		3	
Brown-headed Cowbird	*Molothrus ater*		3 P	
Great-tailed Grackle	*Quiscalus mexicanus*		1 2 3	B, 2
House Finch	*Carpodacus mexicanus*		2	
Pine Siskin	*Carduelis pinus*		1	
Lesser Goldfinch	*Carduelis psaltria*		1 3	
American Goldfinch	*Carduelis tristis*		1	
Boat-tailed Grackle	*Quiscalus major*		2, 3	
Horned Lark	*Eremophila alpestris*	1		

* 1 = Wetland 1, 2 = Wetland 2, 3 = Wetland 3, P = pond
[+] B = confirmed breeding, B? = suspected breeding

NOTE: the 2006 survey did not identify the diversity of songbirds that were identified during the 2005 survey. This may be due to several factors that included specific dates and numbers of surveys, drought conditions that may have resulted in less inviting habitat, or other unknown factors. The lack of Cinnamon Teals and Gadwalls at the ponds in 2006 but that were observed at the Municipal Treatment Lagoons in 2006 was noted but no explanation was determined.