

ENVIRONMENTAL ASSESSMENT

SITE NAME: NP3 APPLICANT: NP3 Matt Nistler
 LOCATION: S½S½ Sec 23 T1N R1W COUNTY: Jefferson

PROPOSED ACTION: Matt Nistler's company, NP3, proposes to mine and crush gravel from a 20.7-acre site 8 miles south of Interstate 90 near Willow Creek, MT. Access is off Jefferson River Road by 2-track through the landowner's yard. The product would be used for numerous jobs in and around Willow Creek, Jefferson County, and Three Forks.
Reclamation would be completed to meadow, wetland and wildlife ponds by December 2010. The reclamation bond is for \$18,942.

A: Significant Unavoidable Impacts B: Insignificant as a result of conditioned mitigation C: Insignificant as proposed
 L: Long Term Impacts S: Short Term Impacts

						POTENTIAL IMPACTS
						EXPLANATION
PHYSICAL ENVIRONMENT						
1. <u>TOPOGRAPHY</u>			X	X		Site is a dryland meadow with some isolated wetlands. It is on the first terrace above the Jefferson River but above the floodplain. The isolated wetlands are old filled in oxbows. Mining would leave some expanded wetlands and a long wildlife pond.
2. <u>GEOLOGY</u> ; Stability			X	X		Unglaciaded, quaternary alluvial gravels. Maximum mining depth would be 10 feet.
3. <u>SOILS</u> ; Quality, Distribution			X		X	Soils average between 6 to 12 inches of generally loam soils overlying 10 feet of gravel. These soils have supported native hayland and pastures. Good soil salvage would result in no significant adverse impacts to soils. Average annual precipitation is about 15 inches.
4. <u>WATER</u> ; Quality; Quantity; Distribution			X		X	The Jefferson River flows to the east and northeast through the southeast portion of the landowner's property. It is over 1,000 feet from the proposed mining disturbance. The proposed permit area is above the 100-year floodplain and did not require local authorization. Several wetlands mainly vegetated with cattails lie in old oxbows of the river. No open water is associated with these wetlands and they do not connect with the Jefferson River. Ron LeCain, a Wetlands Specialist with Confluence Incorporated of Bozeman, Montana inspected the wetlands and determined no 404 permits would be needed if the operation was approved. This determination was verified with the U. S. Army Corps of Engineers. The 1-acre eastern wetland would be impacted by mining a 3-acre pond up to 12 feet deep with a wetland rim around it. The small part of wetland that would be removed by mining would be replaced or augmented by establishing new wetland around the pond. This system would be connected with the large pond by the oxbow.

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						<p>The western wetland would be mined across when excavating a 12.5-acre pond. This would eliminate a little less than an acre of wetland. Vegetation around the pond perimeter would reestablish approximately 1 acre of wetland vegetation.</p> <p>The wetlands adjacent to the ponds would provide different type of shoreline and wetland habitat than presently exists on site, thus increasing diversity while maintaining the large majority of the existing wetland type and adding open water.</p> <p>Annual evaporation from the ponds is estimated to be 30 inches (or 35 acre feet) of water per year based on mean annual lake evaporation rates (Environmental Data Service, U. S. Department of Commerce, 1968). The land owner has irrigation water rights and has applied to DNRC for modifications to use them for recreation and other uses. The Jefferson Basin is open for this type of development.</p> <p>One domestic well on the property is 18 feet deep with a static water level of 12 feet. Six test wells were drilled during the spring of 2006. Well locations are shown on Figure B in the permit.</p> <p>Monitoring data from April through July were gathered. This encompasses the low to high water levels for the year. Water levels in April ranged from 3.5 feet to 6.5 feet below the surface of the ground while in June the highest water levels were 2.5 feet to 4.7 feet. Individual well fluctuation was from 3 feet to 1 foot.</p> <p>River heating has not been a problem along this part of the river. Forty miles upstream near Twin Bridges the Jefferson River has been closed by Montana Fish Wildlife and Parks (FWP) to fishing because the river water temperature rose too high during summer low flows.</p> <p>A comparison of the two stretches of river are shown below:</p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>Three Forks</u></th> <th style="text-align: center;"><u>Twin Bridges</u></th> </tr> </thead> <tbody> <tr> <td>July Air/Water Temp</td> <td style="text-align: center;">84.1/72° F</td> <td style="text-align: center;">84.1/67° F</td> </tr> <tr> <td>Aug. Air/Water Temp</td> <td style="text-align: center;">82.8/70° F</td> <td style="text-align: center;">82.2/65° F</td> </tr> <tr> <td>July River Flow</td> <td style="text-align: center;">1960 cfs</td> <td style="text-align: center;">1920 cfs</td> </tr> <tr> <td>Aug. River Flow</td> <td style="text-align: center;">847 cfs</td> <td style="text-align: center;">804 cfs</td> </tr> </tbody> </table> <p>FWP personnel are unaware of any groundwater temperature research in the Jefferson basin; however, factors affecting heating in ponds include surface area, depth, water volume, climate and flow rate of groundwater through the ponds. Groundwater flow rate through the highly transmissive gravels is expected to be relatively high. Pond water is warmed by higher seasonal temperatures in the spring and summer. Studies of the effect of heating in gravel pit ponds (Ostrander and others, 1998; Harden Environmental, 1995) have shown</p>		<u>Three Forks</u>	<u>Twin Bridges</u>	July Air/Water Temp	84.1/72° F	84.1/67° F	Aug. Air/Water Temp	82.8/70° F	82.2/65° F	July River Flow	1960 cfs	1920 cfs	Aug. River Flow	847 cfs	804 cfs
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											<p>that ponds typically have minimal impact on the heating of downgradient groundwater and that the small thermal gains (<1 degree C) measured in pit ponds are dissipated in groundwater within hundreds of meters downgradient of the pond. Any heating of pond water at the NP3 site is anticipated to dissipate prior to reaching the river. The smaller pond is about 900 feet, and the larger pond is 1,200 to 2,800 feet from the river.</p> <p>Stormwater would remain on site.</p> <p>Only minimal impacts to water quality or quantity from mining would be expected.</p>
5. <u>AIR</u> ; Quality								X		X	The crusher would have an air quality permit. Fugitive dust would be controlled with the use of water trucks. Air quality impacts would be minimal.
6. <u>UNIQUE, ENDANGERED, FRAGILE, or LIMITED</u> environmental resources								X		X	<p>The Natural Heritage Program identified 6 bird species and Townsend's big-eared bat that might exist in the general area of this site. None of them were located in Section 23 but the inferred extent covered that section.</p> <p>The long-billed curlew and grasshopper sparrow use short-grass or mid-grass prairie habitat which exists on site. The grasshopper sparrow population is increasing east of the divide because of CRP.</p> <p>The bobolink likes tall-grass prairie and is increasing in CRP land east of the divide. There is no bobolink habitat on site.</p> <p>The sage thrasher and Brewer's sparrow are sagebrush obligate, and the lark bunting is a short-grass sagebrush mixed habitat dweller. This site has no sagebrush so it does not provide good habitat for these three species.</p> <p>Townsend's big-eared bat lives in Lewis and Clark Caverns about 4 miles to the west. It might also reside in other caves or abandoned buildings. It feeds on small moths, true flies, and wasps around trees, preferring wooded habitat such as Douglas fir, ponderosa pine, juniper and cottonwood, in that order. Except for a few cottonwoods along the river, this site does not have good feeding or roosting habitat for this bat.</p> <p>No significant impacts to these species are expected as a result of this project.</p>
BIOLOGICAL ENVIRONMENT											
1. <u>TERRESTRIAL, AVIAN, and AQUATIC</u> ; species and habitats								X	X		<p>Mining would have a minimal detrimental impact because of the small area that would be disturbed. The rangeland has been heavily grazed in the past.</p> <p>The ponds would provide open, calm water for waterfowl with wetland vegetation along the shorelines. Revegetation of facility area disturbance to native species would increase and diversify wildlife habitat.</p>

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											Approximately 1.75 acres of existing wetland would be removed during mining, while about 4 acres would be re-established, along with two ponds: 12.5 acres and 2 acres.
2. <u>VEGETATION</u> ; quantity, quality, species								X	X		<p>Portions of the site were used for hayland and dryland range. Vegetation includes a mix of native and introduced species. Examples include blue grama, western wheatgrass, curlycup gumweed, yarrow, and crested wheatgrass, yellow sweet clover, kochia. Wetlands and sub-irrigated areas include cattails, and several rushes and sedges.</p> <p>Spotted knapweed, bullthistle, and possibly whitetop are on site.</p> <p>Mining would have beneficial impacts because of the change from rangeland to pond, wetland, and wildlife habitat and revegetation to native species. The weed control plan could help eliminated noxious weeds on site.</p>
3. <u>AGRICULTURE</u> ; grazing, crops Production								X	X		<p>Mining would result in long term reduction of grazing production. About 12 acres would be taken out of production and replaced by a pond or wetland at final reclamation. The pond and wetland areas would improve wildlife habitat with emphasis on waterfowl and shorebirds.</p> <p>Trumpeter swans use a nearby oxbow pond during migration. The reclaimed ponds would increase habitat for this bird.</p>
HUMAN ENVIRONMENT											
1. <u>SOCIAL</u> ; structures and mores								X		X	
2. <u>CULTURAL</u> uniqueness/diversity								X		X	
3. <u>POPULATION</u> ; quantity/diversity								X		X	The site is in a relatively "undiscovered" portion of rural Jefferson County.
4. <u>HOUSING</u> ; quantity/distribution								X		X	
5. <u>HUMAN HEALTH & SAFETY</u>								X		X	With control of air emissions, mining would have minimum impact on residences.
6. <u>COMMUNITY & PERSONAL INCOME</u>								X		X	
7. <u>EMPLOYMENT</u> ; quantity, distribution								X		X	Local construction projects for which this material would be used would result in temporary employment in the area.
8. <u>TAX BASE</u> ; state/local tax								X		X	
9. <u>GOVERNMENT SERVICES</u> ;								X		X	
10. <u>INDUSTRIAL, COMMERCIAL</u> and <u>AGRICULTURAL</u> activities								X		X	
11. <u>HISTORICAL</u> and <u>ARCHAEOLOGICAL</u>								X		X	A walkover of the area did not reveal any artifacts or signs of occupation. If during operations resources were to be discovered, activities would be halted and temporarily moved

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						to another area until SHPO was contacted and the importance of the site was determined.	
12. <u>AESTHETICS</u>			X		X	There are no nearby neighbors. The stockpiles would be set back more than a quarter mile from the river, creating a distance buffer from recreationists using the river.	
13. <u>ENVIRONMENTAL PLANS</u> and <u>GOALS</u> ; local and regional			X		X		
14. <u>DEMANDS</u> on <u>ENVIRONMENTAL RESOURCES</u> of land, water, air and energy			X		X		
15. <u>TRANSPORTATION</u> ; networks and traffic flows			X		X		

References:

Environmental Data Service, Environmental Sciences Services Administration, U. S. Department of Commerce, *Climatic Atlas of the United States*, 1968.

Harden Environmental Services Limited, 1995, *Hydrology Report—Caledon Sand and Gravel Inc.*, January 18, 1995.

Ostrander, M.D., Martin, P.J., Balckport, B. and Picotti, M., 1998, *Impact of Aggregate Extraction Activities on Cold Water Discharge*. Groundwater in a Watershed Context. Canadian Water Resources Association.

REGULATORY IMPACT ON PRIVATE PROPERTY: The analysis done in response to the Private Property Assessment Act indicates no impact. The Department does not plan to deny the application or impose conditions that would restrict the use of private property so as to constitute a taking.

PUBLIC INVOLVEMENT: Natural Heritage Program, State Historic Preservation Office

OTHER GROUPS OR AGENCIES CONTACTED OR WHICH MAY HAVE OVERLAPPING JURISDICTION: Air Resources Management Bureau, MT Mining Safety and Health, MT Fish Wildlife and Parks, Jefferson County Commissioners, Jefferson County Weed Board

ALTERNATIVES CONSIDERED: Denial

RECOMMENDATIONS CONCERNING PREPARATION OF AN EIS: Unnecessary, No Significant Impacts

APPROVED BY: _____ DATE: _____

Prepared by Jo Stephen