US Army Corps
of Engineers

Sacramento District
1325 J Street
Sacramento, CA 95814-2922

Public Notice

Number: 200575044
Date: March 23, 2005
Comments Due: April 22, 2005

SUBJECT: The U.S. Army Corps of Engineers, Sacramento District, (Corps) is evaluating a permit application for an instream gravel operation within the Animas River. The proposed gravel pit is commonly known as the Bar-D pit. This notice is to inform interested parties of the proposed activity and to solicit comments. This notice may also be viewed at the Corps web site at http://www.spk.usace.army.mil/regulatory.html.

AUTHORITY: This application is being evaluated under Section 404 of the Clean Water Act for the discharge of dredged or fill material in waters of the United States.

APPLICANT: Four Corners Materials
Marcia Talvitie
PO Box 2707
Durango, Colorado 81302
970-247-2172

LOCATION: The project site is located within the Animas Valley, north of Durango in Section 2, Township 36, Range 9, La Plata County, Colorado, and can be seen on the Hermosa USGS Topographic Quadrangle.

PROJECT DESCRIPTION:

Background Information:

Gravel mining has occurred at the Bar-D site since the mid-1970s. The U.S. Army Corps of Engineers (USACOE) granted multi-year 404 permits (with various extensions) for the Bar-D operation in 1981, 1989, and 1996. The most recent permit extension (#199575400) expired on November 30, 2004.

Site characteristics:
The geomorphic form of the Animas River varies throughout the Durango area. Six reaches have been identified from Bake's Bridge downstream to Carbon Junction, each with significantly different characteristics (Figures 2 and 3). Each reach has its own geologic underpinnings and its own gradient or slope, water velocity and energy, and therefore channel material and characteristics.

The various reaches relate directly to the geologic and topographic environment that existed as the last (Pinedale) glacier slowly retreated up valley, and then disappeared altogether. The six reaches are:
(1) The Canyon Reach (located above Bake's Bridge),
(2) The Straight Reach, (located just downstream from Baker's Bridge),
(3) The Braided Reach (the Bar-D site is within this reach),
(4) The Transition Reach (relative decrease in velocity and slope),
(5) The Meander Reach (relatively low velocity and very sinuous),
(6) The Durango Reach (slope and velocity increase and river is down cutting).

The Bar-D site is located in the Braided Reach (#3) of the Animas River. In the Braided Reach, channel slope begins to decrease and velocity lowers as the river exits steeper reaches (#1 and #2) to the north. The bulk of the river's coarse load (gravel) is deposited within Reach #3. As the river proceeds into Reaches 4 and 5, it begins to meander significantly and further loses velocity until it reaches the Durango Reach where channel slope increases again and velocity picks up. The hydrogeomorphic setting of Reach #3 makes sustainable in-stream aggregate mining a probability, due to its downstream proximity to an unlimited source of high quality aggregate material.

Purpose and Need:

The purpose of the project is to continue in-stream aggregate mining operations at the Bar-D site in a sustainable manner which minimizes negative effects on the Animas River and allows FCM to continue running a successful business by providing a much needed, high quality, aggregate product to its industrial customer base throughout the Durango region. Aggregate resources are required for a wide variety of uses within the construction industry. The largest quantities of aggregates are used for highway construction and repair, fill purposes, and concrete production. From a regional perspective, residential construction will continue to form an important component of the demand market.

Project Description:

The basis of the proposed mining plan is the determination of a stable profile for the Braided Reach (Bar-D site). Instead of basing the permissible extraction volume of the site on a fixed yearly rate, the volume will be limited to material available above elevations established along a defined stable thalweg profile.

Using the thalweg data measured in July 2003, a polynomial least squares fit was calculated. The cross-sections extend well upstream and downstream of the mining area, as can be seen in Figures 4, and 5A, B, and C. This fit is a second-order polynomial also known as a quadratic function. A second order polynomial was chosen in order to provide a single inflection or curve along the line. Polynomials of higher order can have multiple inflection points. The choice of a single inflection will minimize the instantaneous curvature of the line. This feature was selected in order to minimize any effect of head and tail cutting, which occurs in areas of rapid gradient change along a river. For this application, the constants were derived through the calculation of a least squares fit using the July 2003 data. A least squares fit minimizes the vertical offsets of the data. An offset is the distance between the polynomial and a specific data point. The vertical offset, rather than the perpendicular offset, is used to simplify the computation. The offset is squared in order to base the computation on the magnitude of the offset. This removes the effect of some points having a negative offset. The sum of the magnitude of the offsets is then minimized to derive the constants for the polynomial, which most closely matches the data set.

The profiles on Figure 6 include the August 2003 survey data as well as the stable river envelope relative to the stable profile. It can be seen that the current thalweg in some areas is at or below the stable river profile. These areas cannot currently be mined. However, due to the aggrading nature of the river, these areas will fill in over time with future high flow events. In these areas where river deposits raise the river thalweg above the stable profile, mining may occur.

Once there are substantial deposits in these areas they can be mined. Also, there are some areas where substantial reserves exist.

Cross-Sectional Control:

Cross sectional data will be collected twice each year, before and after mining has taken place. The future year's active mining areas will be determined by these surveys. Areas showing reserves will be mined to produce raw aggregate. The volume of aggregate removed on an annual basis is expected to average 100,000 tons, but may be up to a maximum of 150,000 tons. However, in the event that less than 100,000

tons are available above the stable profile, only the gravel which is above the stable profile will be mined. All material will be trucked off-site as raw aggregate material to be processed and sold at FCM's Trimble Lane Facility.

Aggregate Removal:

Mining will take place in an inactive area of the river channel. The active channel of the river may be allowed to remain in its current location or be rerouted through placement of clean river gravels and/or ditching in river gravels (Figure 7). Depending on the specific location of the river, some areas of gravel can be removed without the placement of fill. In such cases, dikes will be created by leaving portions of the aggregate material in place between the active stream and the area being mined (Figure 8). These dikes serve to route flow around a particular excavation area.

Aggregate materials will be removed to the depth of the stable profile. This will be accomplished using a laser-leveler, front-end loader, hydraulic excavator, and/or dozer. Dry material will immediately be hauled offsite. Wet extracted material may be temporarily stockpiled adjacent to the excavation (Figure 9) for a period of a few days to several weeks to drain water. Stockpiles will be limited to approximately 5,000 cubic yards per pile at any given time, but all stockpile material will be removed from the mining area by the end of the scheduled mining activity for that year. This temporary diversion will be constructed to convey low flow around the area to be mined.

Temporary access to the west side of the main channel may be required at times. This access can be met either by use of private roads (as allowed by respective landowners) or by construction of a temporary crossing during low-flow periods. The mean daily discharge of the Animas River for the months of November through March is calculated to range from 121 to 330 cfs. From the Bureau Public Roads 1963 design document, it was determined that six, 48-inch diameter culverts, of equivalents, would be adequate to convey the typical expected flows. The crossing will be occasional and temporary. Typical temporary low water crossing plans can be seen on Figure 10.

At the end of excavation season, prior to runoff periods, all temporary crossings will be removed. However, dikes and/or berms may be left in the mining areas to mimic natural braiding for this stretch of river, as opposed to the previous plans involving large cells.

Because the permit area lies completely within the active river channel the permit boundary will not be staked, however prior to mining the active area will be staked. This will serve to limit the lateral extent of the extraction area. Also, grade stakes will be surveyed to provide guidance for the operators.

Mitigation measures which will be implemented at the Bar-D site to remedy negative effects on the channel are described in the mitigation plan.

No harmful chemicals will be used on site. No explosives will be used in this operation.

Water Quality Monitoring:

Water quality monitoring has been performed annually at the site from 1997 through 2004. The original water quality monitoring plan was reviewed and approved by the Colorado Department of Public Health and Environment, Water Quality Control Division (WQCD) in February of 1997. The monitoring effort was modified and approved by the WQCD, USACOE and the Animas River Stakeholders Group in November of 2003. Monitoring reports have consistently indicated that downstream parameter concentrations are not significantly higher than upstream concentrations. Therefore, mining at the Bar-D site has little, if any, impact on water quality in the Animas River. The water quality monitoring reports will be submitted annually to the USCOE, WQCD and the Colorado Division of Minerals and Geology (DMG) as an appendix to the post mining report.

Mining Timetable:

The life of this mine is indefinite. This is due to the aggrading nature of the river bed. Depending on maximum river flows, varying quantities of gravel are deposited yearly. Mining will take place during low flow periods of the river, which occur in the late fall or winter months. The actual mining activity will span approximately 2 months each year.

Mine Facilities and Operation:

No on-site facilities will be used for this site. This is due to the close proximity of the processing site, Trimble Lane. An existing access road will be used for hauling the material. Mining will occur during a 2 month period during the low flow months. Operations will occur from 7:00AM-7:00PM, Monday thru Saturday, daylight hours only.

Reporting:

Biannual reports will be submitted to the USACOE and DMG. These reports will document pre- and post-mining conditions. The pre-mining report will be filed prior to the proposed mining season for review and approval by the USACOE and the DMG. The post-mining report will be filed within 90 days of the completion of the mining. The reports will include the following information:

Pre-mining
1) Plan view map showing planned extraction area
2) Cross-sections indicating previous year's post-mining data, current year's Pre-mining cross-sections, safe profile, and planned extraction area
3) Identification of mitigation measures to be implemented during proposed phase of mining
4) Assessment of success of mitigation measures implemented in the past
5) Sediment control measures
6) Water flow data from nearest USGS gauge
7) Estimate of tons to be extracted

Post-mining
1) Plan view map showing actual extraction area
2) Cross-section map showing previous year's data, current pre-mining data, current post-mining data, safe profile, and planned extraction area
3) Mitigation information as necessary
4) Water quality data
5) Water flow data from the nearest USGS gauge
6) Actual tons extracted

Mitigation:

At and near the Bar-D (Figure 1) site, any changes to the Animas River system may be the result of natural processes, gravel extraction, or a combination thereof. Regardless of the cause, bank/channel stability and the health of native riparian habitat is a concern along the entire Animas River corridor. To offset impacts from ongoing aggregate mining at the Bar-D site, Four Corners Materials is proposing a mitigation plan that will implement measures which will aid in bank/channel stabilization and maintain and improve riparian habitat at and in the vicinity of the site.

Mitigation measures will be implemented at the Bar-D site, if deemed necessary by the U.S. Army Corps of Engineers (USACOE) and Four Corner Materials (FCM). The mitigation measures include willow planting, weed control, bank armoring, and bank and channel re-grading. Mitigation measures will be implemented on a schedule as agreed upon by the USACOE and FCM. An assessment of necessary mitigation measures will be made on an annual basis prior to mining activities for a given year. Implementation of mitigation measures will occur during or as soon as possible after mining activities for a given year.

Riparian Vegetation Protection:

As necessary, designated riparian vegetated areas and other desirable vegetation not intended to be impacted by mining activities will be identified (and flagged/fenced if necessary) prior to the excavation process. Typical erosion control BMPs (silt fencing, hay bales, etc.) will be used as necessary to ensure that eroded sediments are kept out of preserved areas.

Alternatives:

Off-site

The material used in the manufacture of concrete and asphalt must meet durability specifications and be economical to transport. Nearby upland areas have been searched by FCM for alternative supplies of resources. Except for deposits on old river terrace remnants, the rock type available within practical haul distances is predominantly composed of relatively soft sedimentary rocks completely unsuitable for the intended use as construction material. Whereas, aggregate material in the river bed consists largely of durable igneous and metamorphic rocks transported from other sources higher in the drainage basin, and it meets the required specifications. Additionally, unlike most of the alluvial material in the river, upland sources of aggregate are not "clean". The material contains large amounts of silt and clay and requires washing before the rock can be used. Considerable quantities of water area necessary for this purpose and are often not readily available or obtaining the required amounts of water makes utilization of these sites costly and impracticable. One other issue raised by the high silt content present in these deposits is siltation of down gradient resources and site-runoff control. Finally, an upland source of material is non-replenishable, therefore, continual relocations to new supply sites would be required for continued mining, which would pose much more environmental degradation than maintaining a sustainable aggregate mining operation at its current location.

A second off-site alternative would be to mine material from the riparian floodplain areas outside of the active river channel in same general vicinity as the Bar-D Pit. The alternative has other environmental impacts not inherent to mining deposits directly from a river channel. Many floodplain areas along the Animas River have mature riparian vegetation and wetlands that would be destroyed by mining. At a minimum, this disrupts wildlife and can result in the permanent loss of riparian and wetland habitats. Even though these areas can be reclaimed, the end use of the affected area is altered. Typically, riparian and wetland vegetated areas are cleared, excavated, and converted to open water. Since the adjacent areas have high ground water levels, permanent ponds or lakes invariably form. Therefore, a commercial gravel operation would create large lakes and evaporation from such impoundments is considerable. In this area, the net annual evaporative loss is approximately 1.3 to 1.5 acre-feet per acre of pond surface. Augmentation water, which is currently at a premium in this area, and could be used for agriculture or any number of other beneficial uses, must be withdrawn from use and dedicated in perpetuity for evaporative loss, and would be very costly to FCM. This option was deemed to be impracticable in light of cost and the environmental degradation which would result.

On-site

Three on-site alternative mining plans were evaluated to determine least environmentally damaging practicable on-site alternative that can be implemented at the Bar-D site which satisfies the project purpose. The evaluation of the scale of mining and gravel extraction made several assumptions that were and are essential to the purpose of the project:

1) The project must provide enough material to meet the surrounding community's needs.
2) The project should maintain the character of the Animas River corridor; therefore it must maintain the stable profile of the Animas River.
3) The project must be in compliance with the goals, policies and land-use codes of La Plata County.
4) The project must remain economically feasible by generating a sufficient return to FCM.

The three alternatives were assessed with the overall stated project purposes and criteria in mind, and being cognizant of site development limitations created by existing site limitations. The following is a description of the Alternatives A, B, and C.

Alternative A:
This alternative involves no mining activity at the Bar-D site. This will result in no waters of the U.S., wildlife, or riparian impacts but there will be an increased deposition of alluvium material in the Animas River channel, whereby increasing the risk of flooding the river valley. It will also incur a financial loss to FCM.

Alternative B:
This alternative involves a reduced amount of gravel extraction (relative to historical operations at the site) and allows for sustainable mining to occur at the site which will aid in maintaining a stable river profile, thus minimizing negative effects on the Animas River and allowing FCM to continue providing a high quality aggregate source to its customer base throughout the Durango region. Mining has occurred at the Bar-D site since the mid 1970's. Originally, mining removed large volumes of gravel from one sizeable location from the channel, which significantly altered the river's characteristics. Since then, many studies have been conducted providing an large amount of research on the aggregate extraction in the Animas River and Bar-D site.

Currently, much more is now known about the geomorphology of the Animas River, aggregate transport and loading, water quality. This new information has been used effectively to modify the original plan over time to the current, low impact, sustainable plan. The plan is sustainable because only replenished gravel will be mined and the stable river profile will remain unchanged. Many government agencies and groups have worked together over time to help FCM improve the mining plan to the low impact, sustainable plan. Alternative B (the current mining plan) has evolved over time to represent the lowest impact alternative that can still provide an economic return to FCM.

Alternative C:
This alternative involves the largest volume of gravel extraction throughout the site, with no adherence to mining within sustainable depth limitation across the site. Although this alternative would result in a financial profit, it would result in significant impacts to the Animas River system at, and in the vicinity of, the Bar-D site.

OTHER GOVERNMENTAL AUTHORIZATIONS:

Water quality certification or a waiver, as required under Section 401 of the Clean Water Act from the State of Colorado Department of Health, Water Quality Control Division, is required for this project. The applicant has indicated they are in the process of applying for certification.

FCM will submit an amendment to a 112 Reclamation Permit Application # M-1977-007 to the Colorado Mined Land Reclamation Division.

La Plata County (special use) approval - The site is currently zoned for use as a gravel mine, however the county will be contacted in case a review will be required for the permit.

An NPDES permit has been issued.

HISTORIC PROPERTIES: Based on the available information including the applicant's report entitled Historical Resources Assessment for the Bar-D Site, cultural resources are not within the project's area of potential effect.

ENDANGERED SPECIES: The proposed activity may affect Federally-listed endangered or threatened species or their critical habitat. The Corps will initiate consultation with the U.S. Fish and Wildlife Service, pursuant to Section 7 of the Endangered Species Act, as appropriate.

The above determinations are based on information provided by the applicant and our preliminary review.

EVALUATION FACTORS: The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the described activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit, which reasonably may be expected to accrue from the described activity, must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the described activity will be considered, including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, consideration of property ownership and, in general, the needs and welfare of the people. The activity's impact on the public interest will include application of the Section 404(b)(1) guidelines promulgated by the Administrator, Environmental Protection Agency (40 CFR Part 230).

The Corps is soliciting comments from the public, Federal, State, and local agencies and officials, Indian tribes, and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps to determine whether to issue, modify, condition, or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

SUBMITTING COMMENTS: Written comments, referencing Public Notice 200575044, must be submitted to the office listed below on or before April 22, 2005:

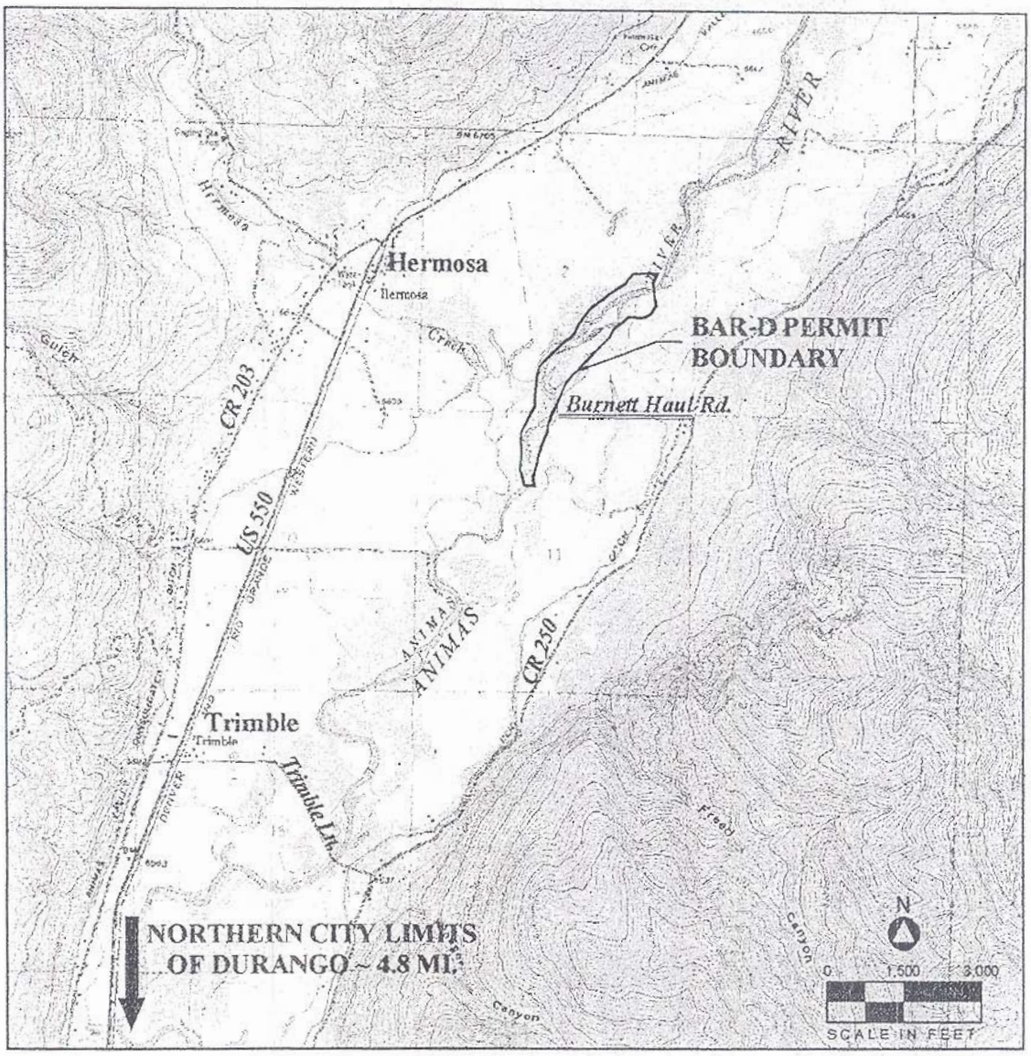
Kara Hellige, Project Manager
US Army Corps of Engineers, Sacramento District
Durango Regulatory Office
278 Sawyer Drive, Suite #1
Durango, Colorado 81303
Email: kara.a.hellige@usace.army.mil

The Corps is particularly interested in receiving comments related to the proposal's probable impacts on the affected aquatic environment and the secondary and cumulative effects. Anyone may request, in writing, that a public hearing be held to consider this application. Requests shall specifically state, with particularity, the reason(s) for holding a public hearing. If the Corps determines that the information received in response to this notice is inadequate for thorough evaluation, a public hearing may be warranted. If a public hearing is warranted, interested parties will be notified of the time, date, and location. Please note that all comment letters received are subject to release to the public through the Freedom of Information Act. If you have questions or need additional information please contact the applicant or the Corps' project manager Kara Hellige, telephone 970-375-9452, or e-mail kara.a.hellige@usace.army.mil.

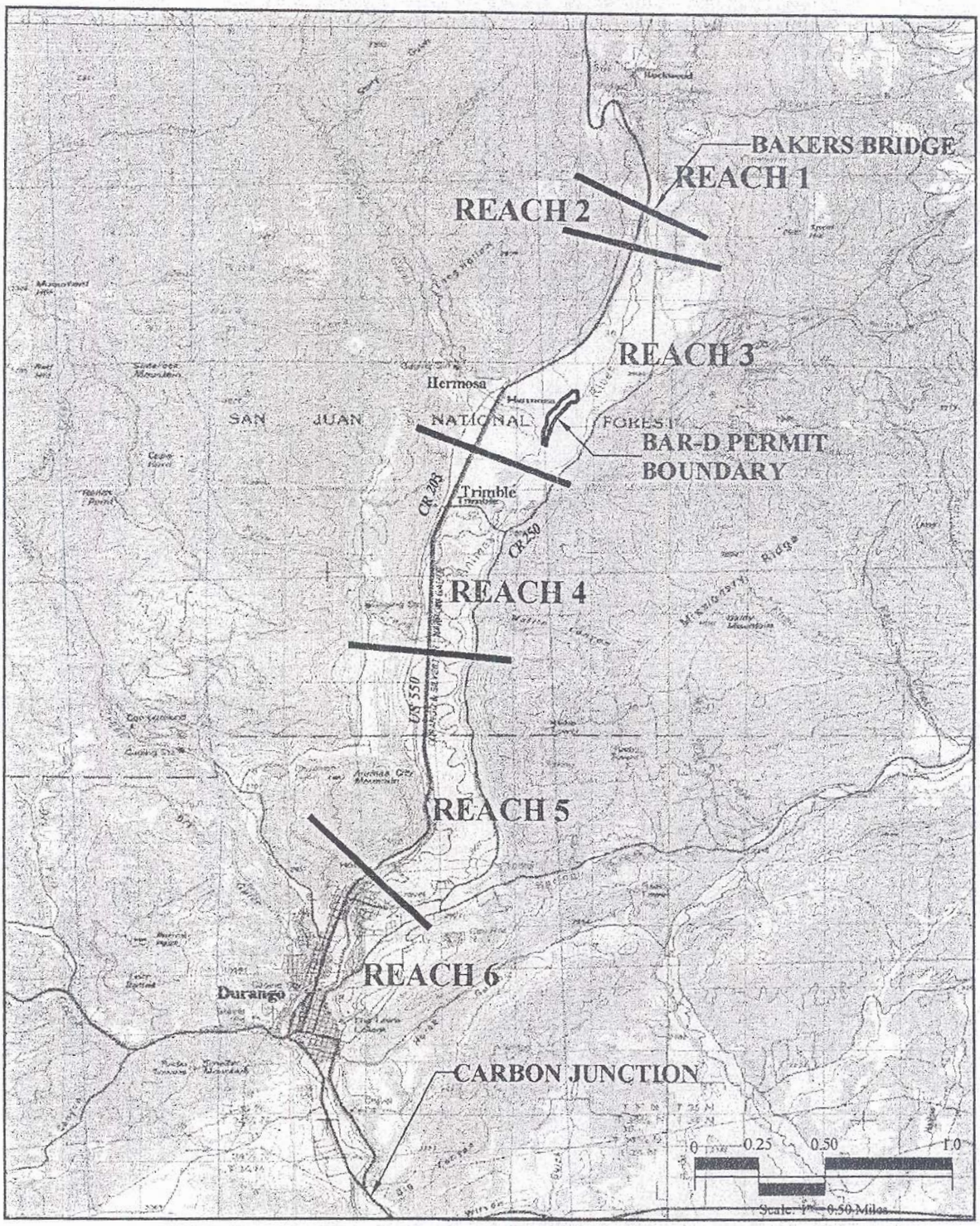
Attachments: 12 drawings

PROJECT LOCATION:

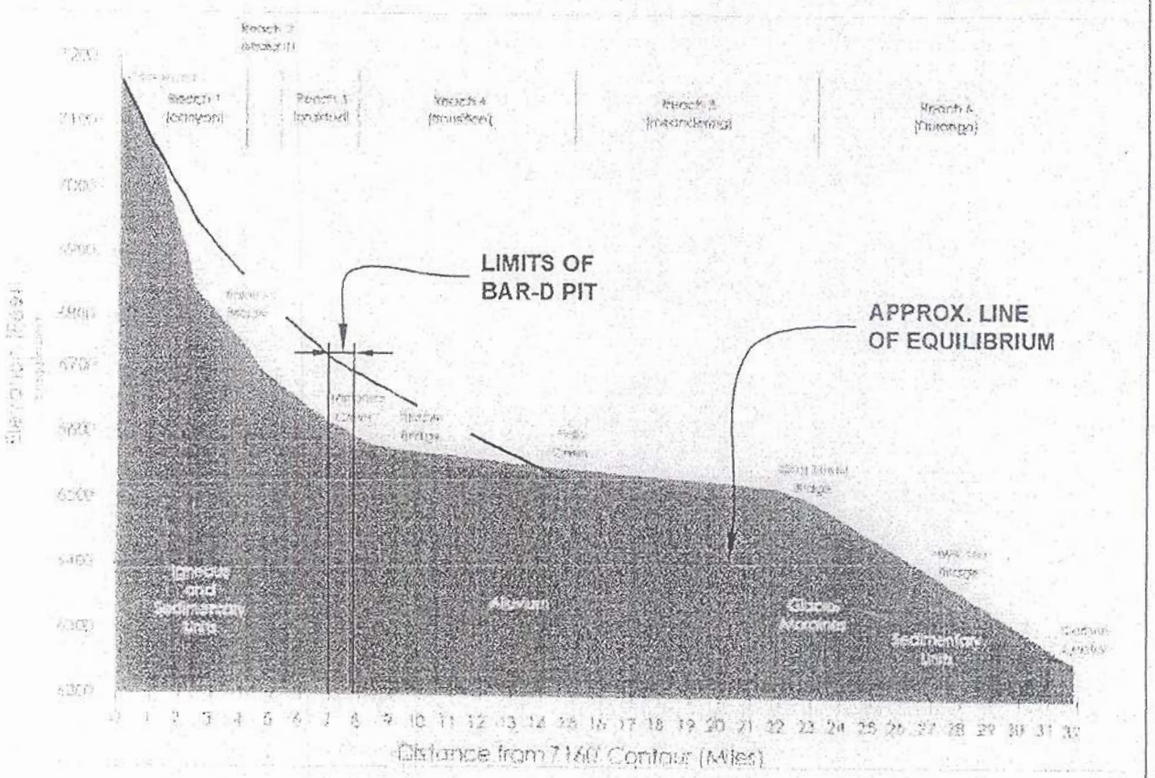
Sections 2 & 11, Township 36 North,
Range 9 West. La Plata County, Colorado.
New Mexico Principal Meridian.



SUGNET ENVIRONMENTAL INC. © 2004	PROJECT LOCATION & VICINITY MAP	FIGURE 1
	BAR-D 404 PERMIT APPLICATION	Source: Hermosa Colo. 7.5' USGS Quadrangle



SUGNET ENVIRONMENTAL INC. © 2004	DURANGO 100K USGS WITH BAR-D LOCATION	FIGURE 2
	BAR-D 404 PERMIT APPLICATION	*Source: Durango 100k Topographical Map*

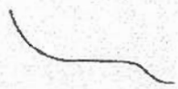


Equilibrium
The river seeks equilibrium with regional base level

Base Level
The regional base level for the Animas Valley is the elevation at the confluence with the Florida River.

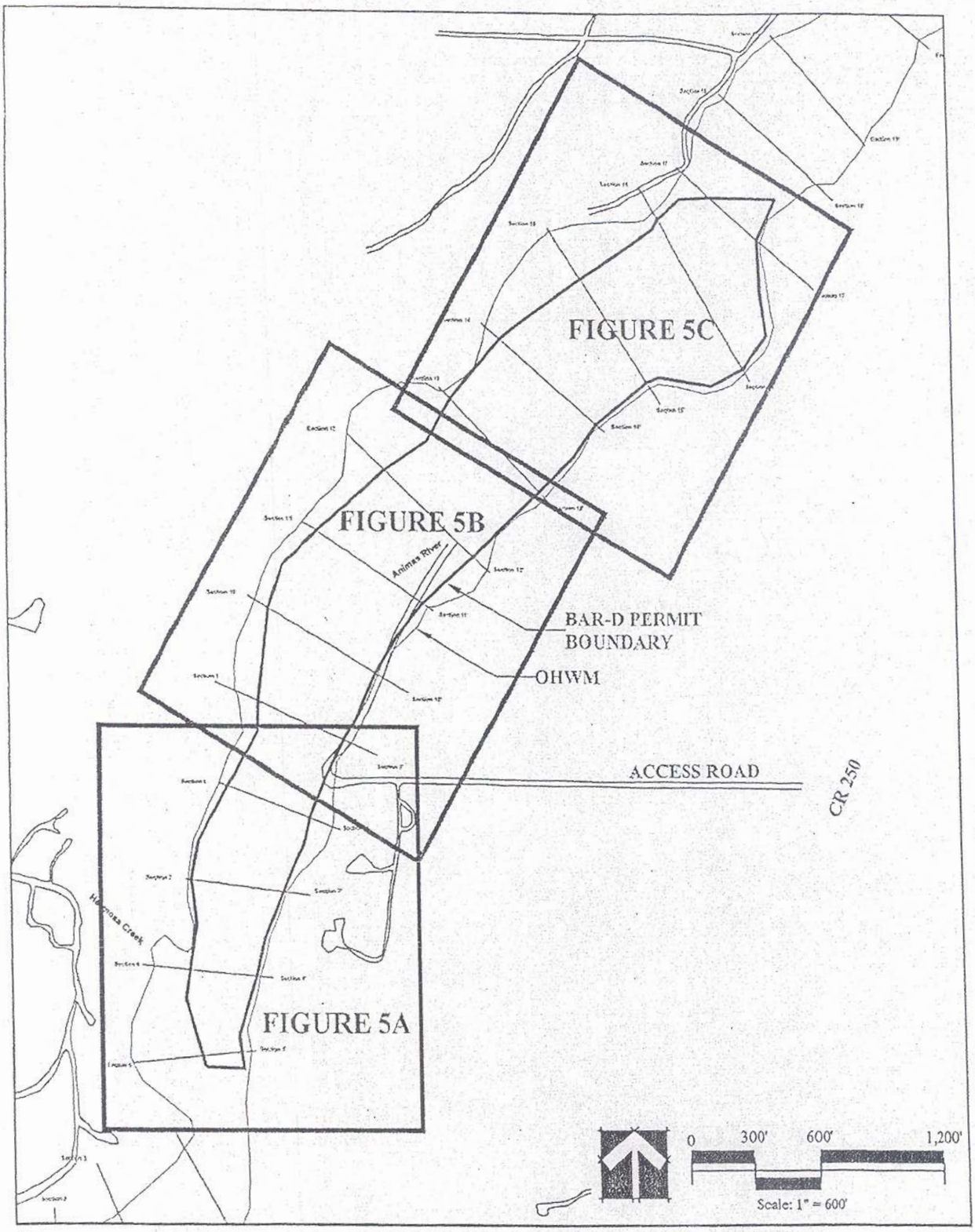
River Profile
The river profile will seek an equilibrium similar to this:

The present profile looks like this:

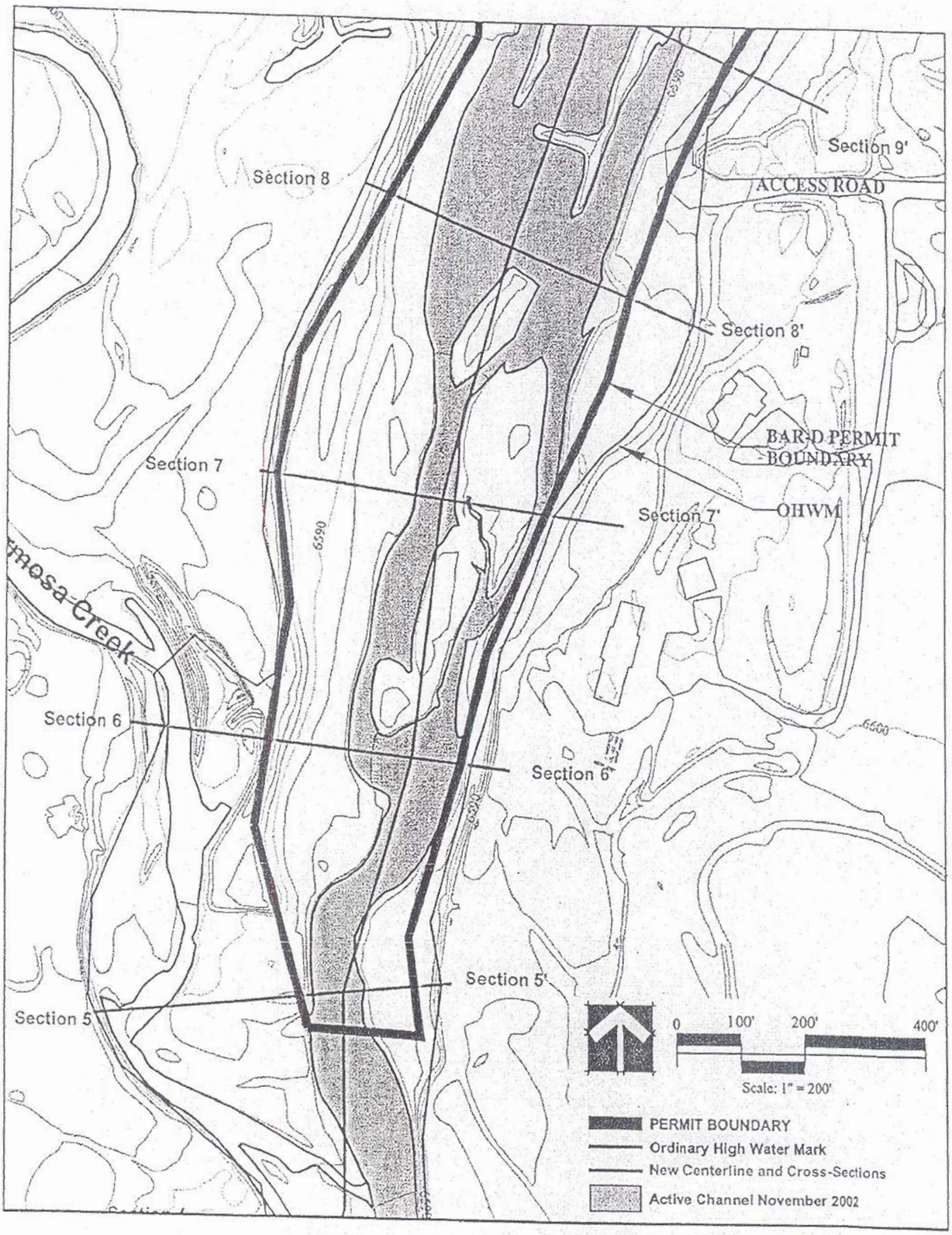


To compensate the river will try to overcome the bulge in the curve by:

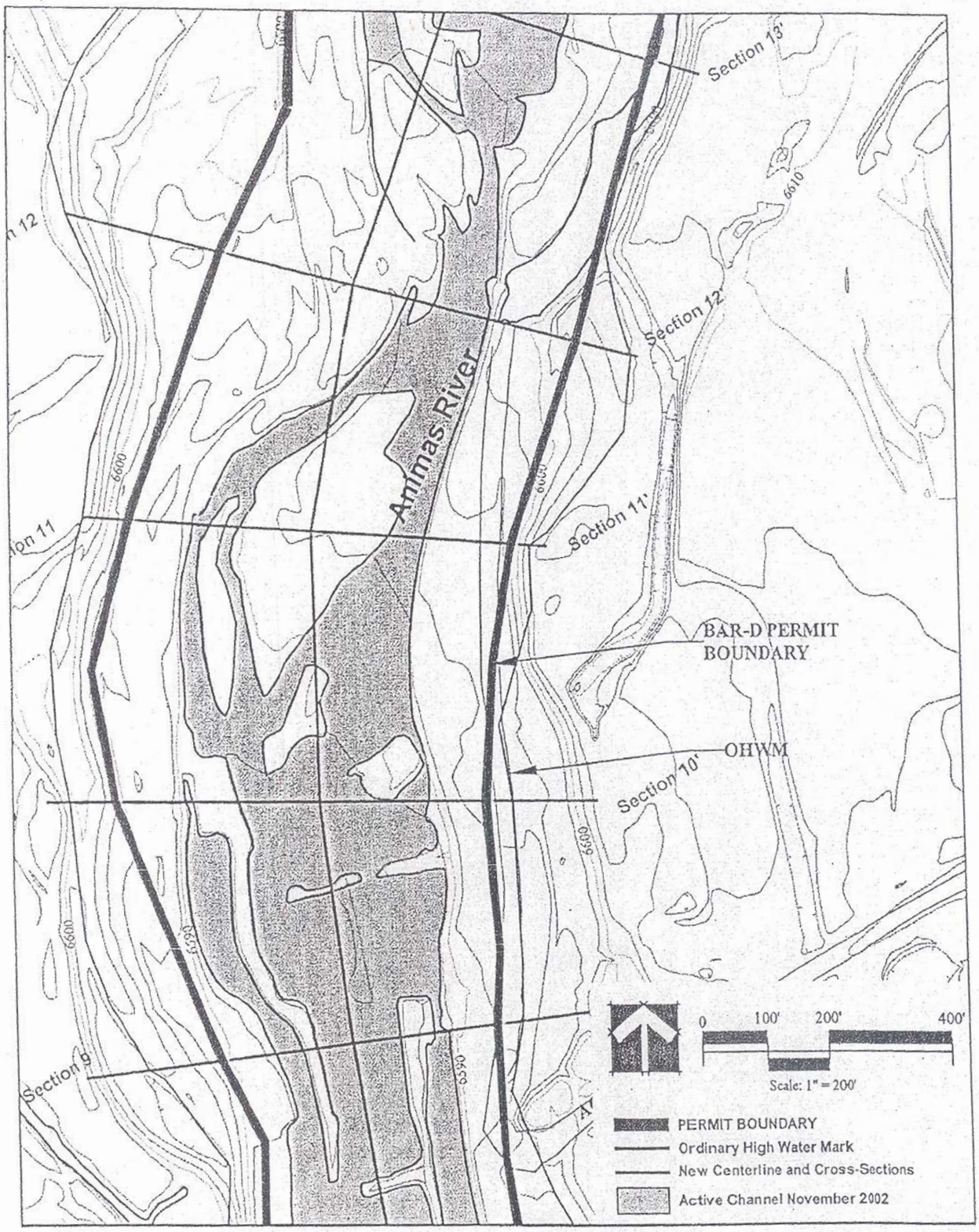
SUGNET ENVIRONMENTAL INC. © 2004	ANIMAS RIVER PROFILE	FIGURE 3
	BAR-D 404 PERMIT APPLICATIONS	Source: Sugnet Environmental Inc. From 1996 and 2003



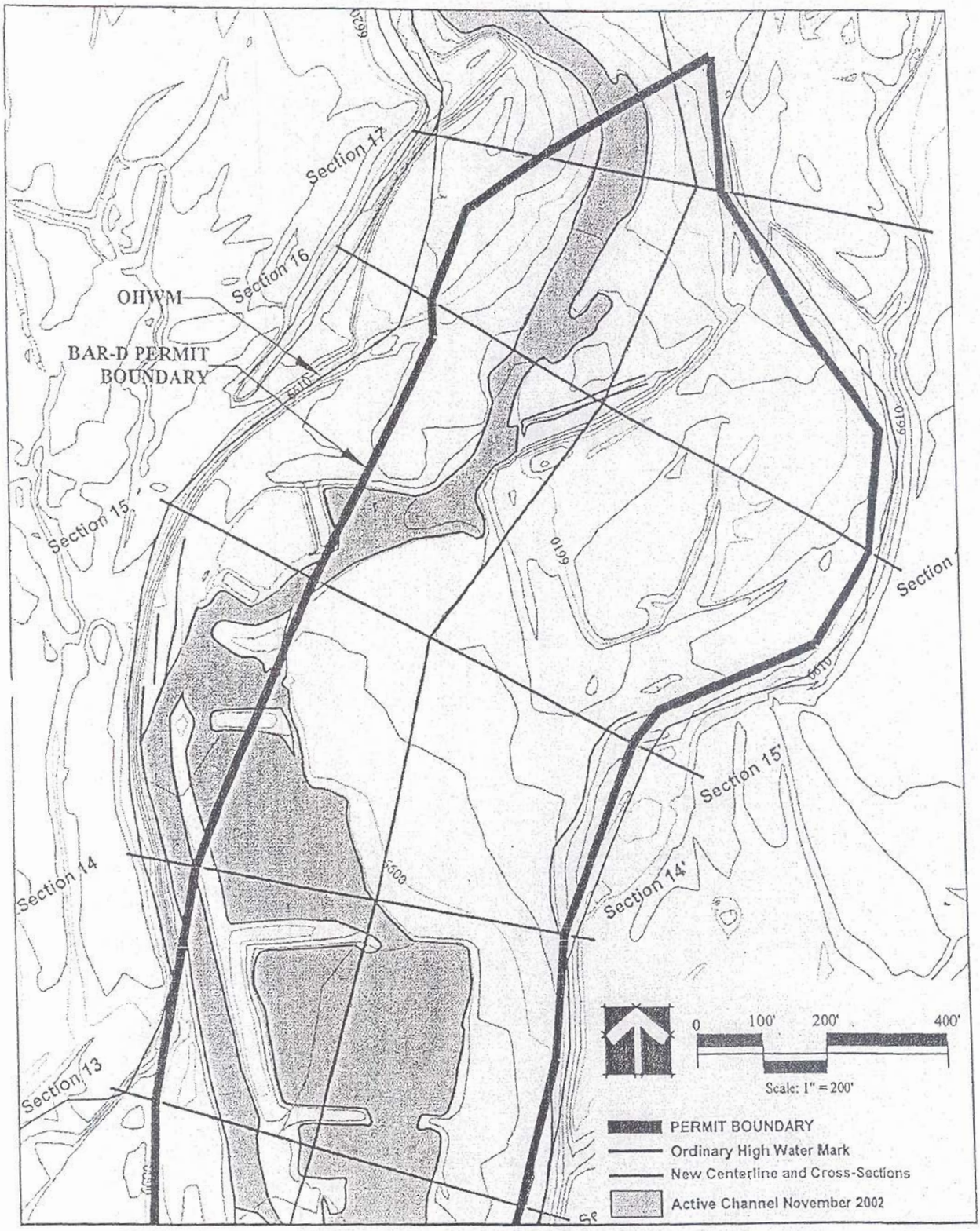
Sugnet Environmental Inc. © 2004	SHEET LAYOUT	FIGURE 4
	BAR-D 404 PERMIT APPLICATION	*Digital topographic, planimetric and land use data provided by Aerometric. Section data by Greg Lewicki & Associates, and Bechtolt Surveying & Engineering*



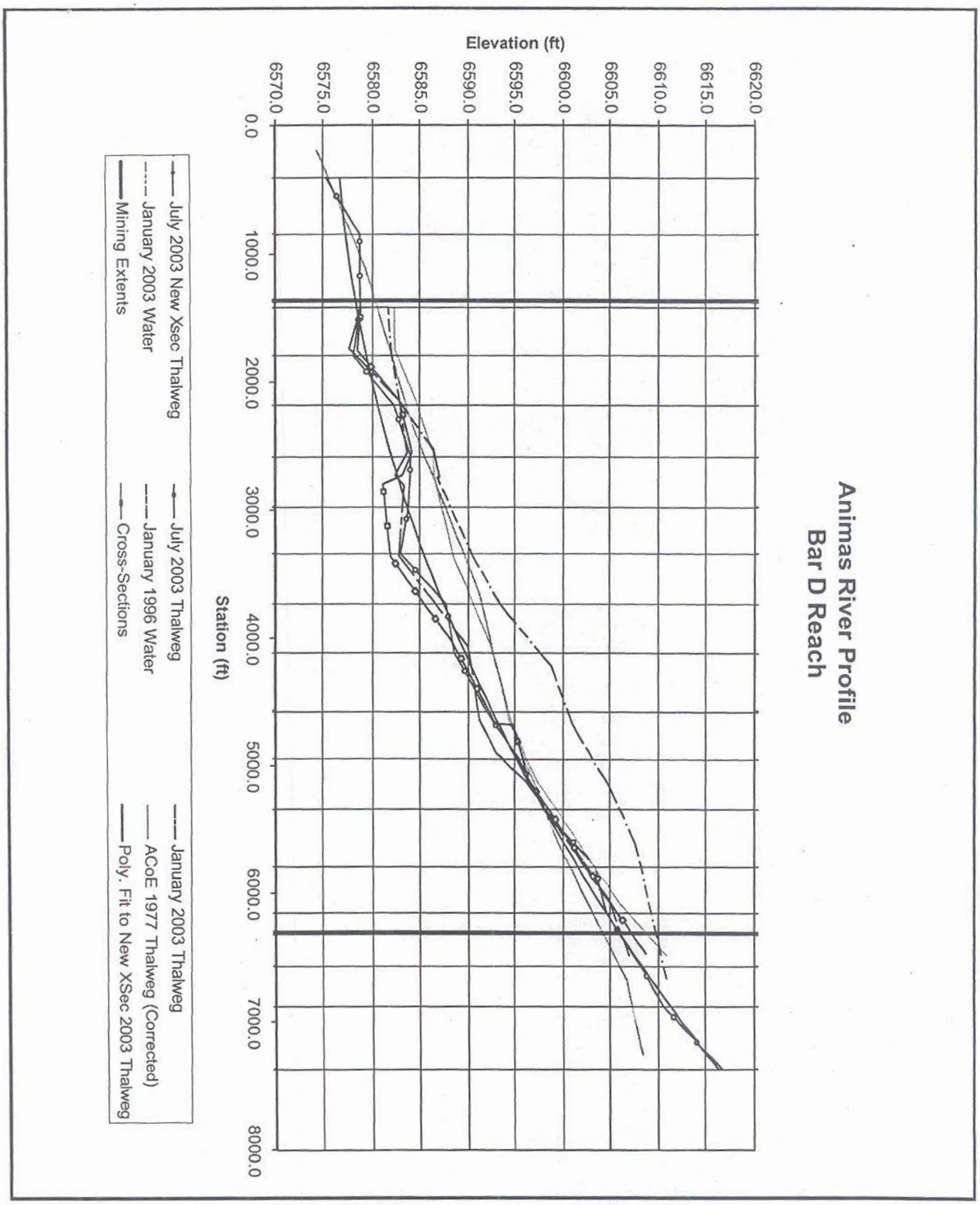
SUGNET ENVIRONMENTAL INC. © 2004	PLAN VIEW BAR-D 404 PERMIT APPLICATION	FIGURE 5a *Digital topographic, planimetric and land use data provided by Aerometric, Section data by Greg Lewicki & Associates, and Bechtolt Surveying & Engineering*



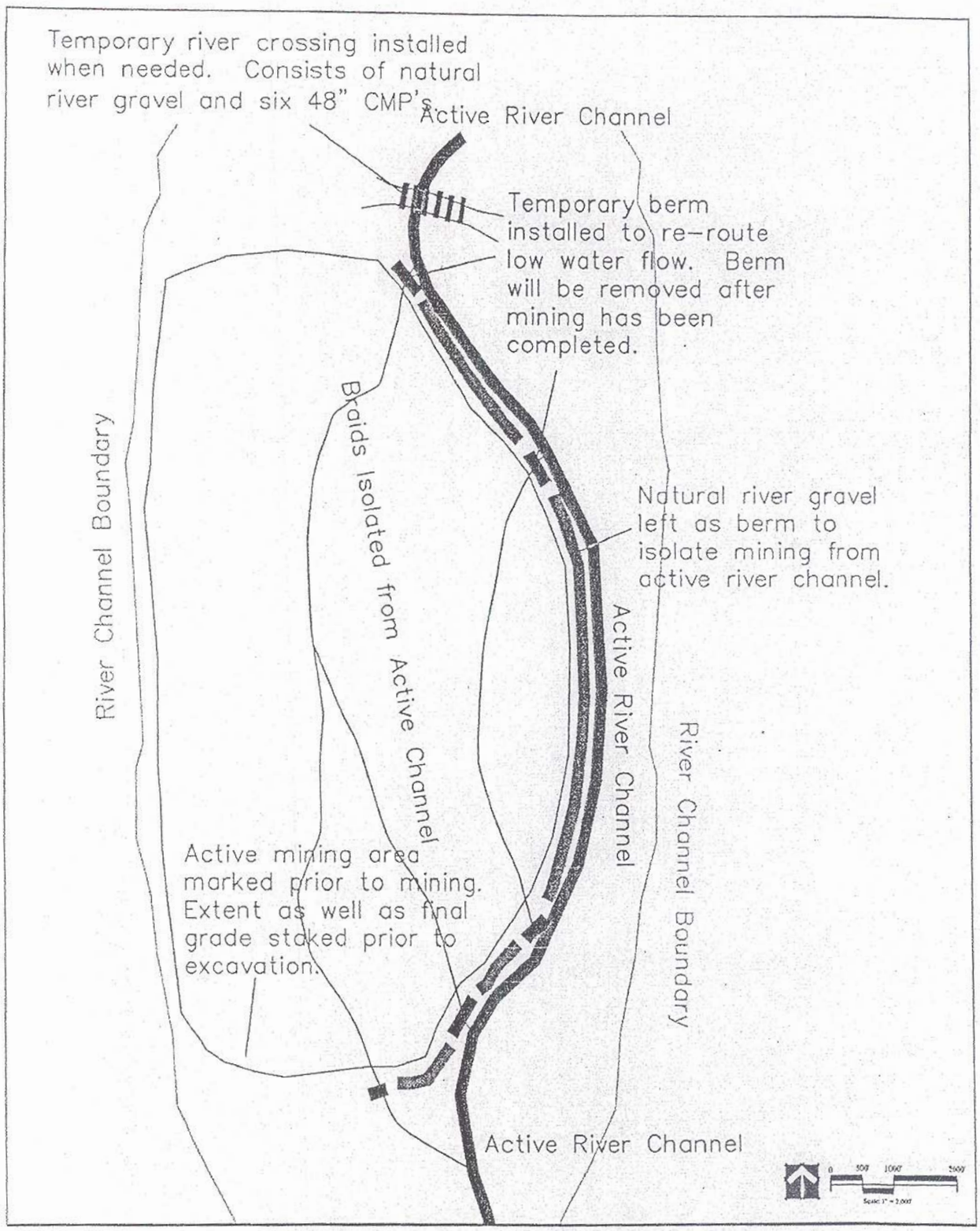
SUGNET ENVIRONMENTAL INC. © 2004	PLAN VIEW BAR-D 404 PERMIT APPLICATION	FIGURE 5b *Digital topographic, planimetric and land use data provided by Aerometric, Section data by Greg Lewicki & Associates, and Bechtoli Surveying & Engineering*



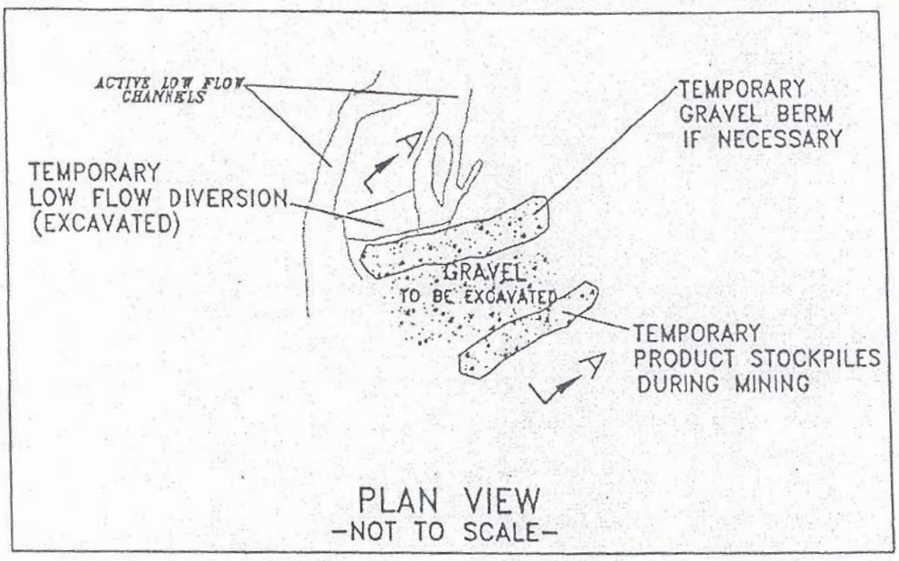
SUGNET ENVIRONMENTAL INC. © 2004	PLAN VIEW BAR-D 404 PERMIT APPLICATION	FIGURE 5c *Digital topographic, planimetric and land use data provided by Aerometric, Section data by Greg Lewicki & Associates, and Bechtolt Surveying & Engineering*

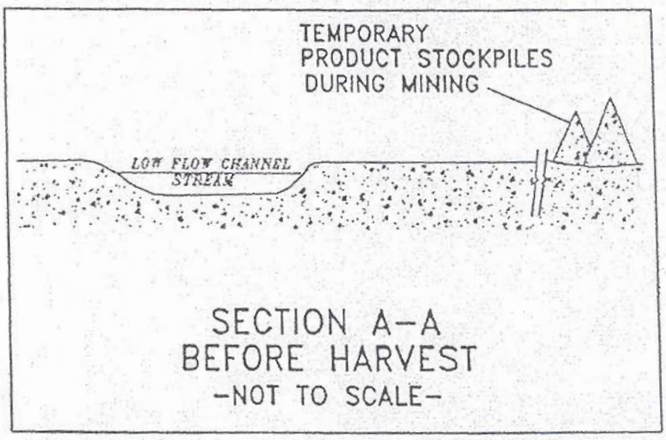


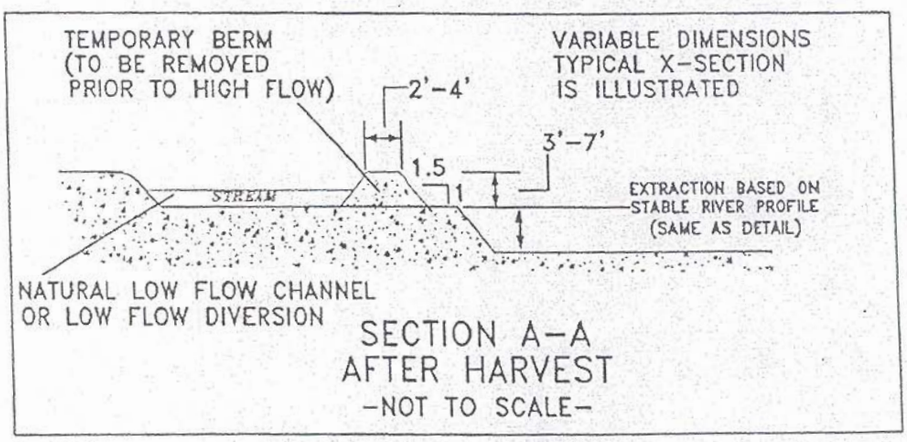
SUGNET ENVIRONMENTAL INC. © 2004	RIVER PROFILES	FIGURE 6
	BAR-D 404 PERMIT APPLICATION	Profile data provided by Greg Lewicki & Associates and Bechtolt Surveying & Engineering



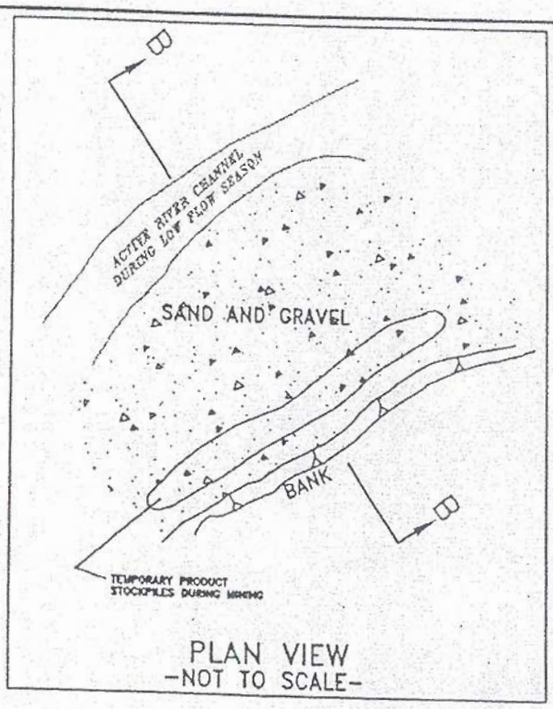
SUGNET ENVIRONMENTAL INC. © 2004	MINING DETAILS	FIGURE 7
	BAR-D 404 PERMIT APPLICATION	*Source: Greg Lewicki & Associates.*



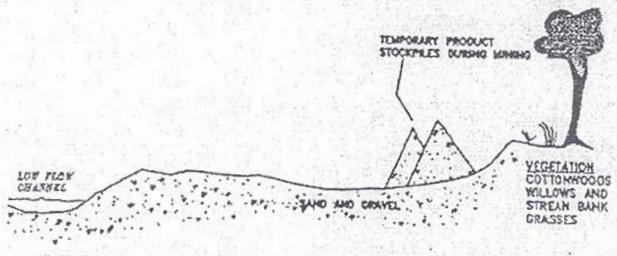




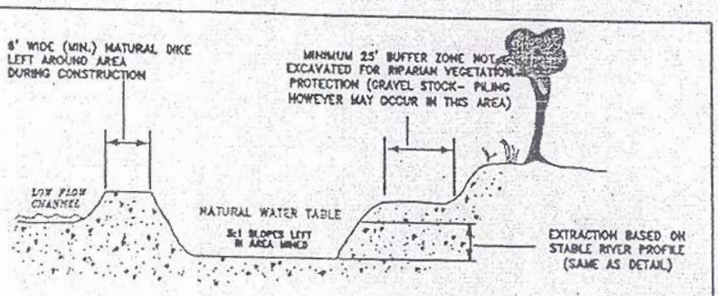
Sugnet Environmental Inc. ©2004	TYPICAL MINING AREA USING TEMPORARY DIVERSION AND/OR TEMPORARY BERM	FIGURE 8
	BAR-D 404 PERMIT APPLICATION	*Source: Sugnet Environmental Inc., 1996*



PLAN VIEW
-NOT TO SCALE-

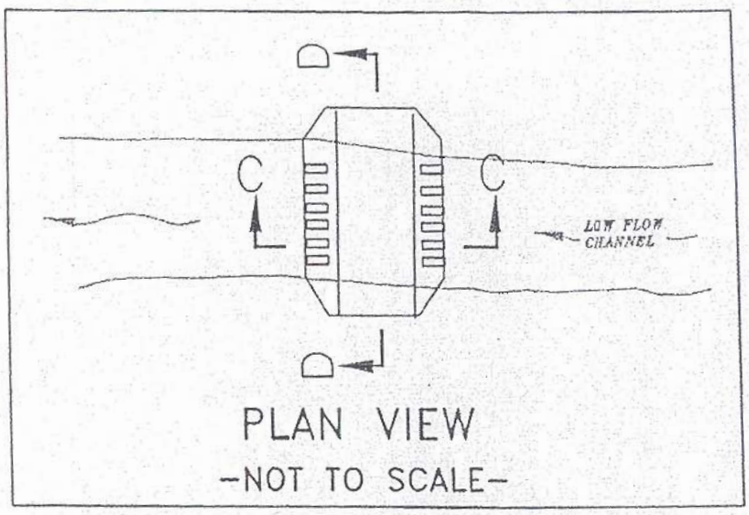


SECTION B–B – BEFORE HARVEST
-NOT TO SCALE-

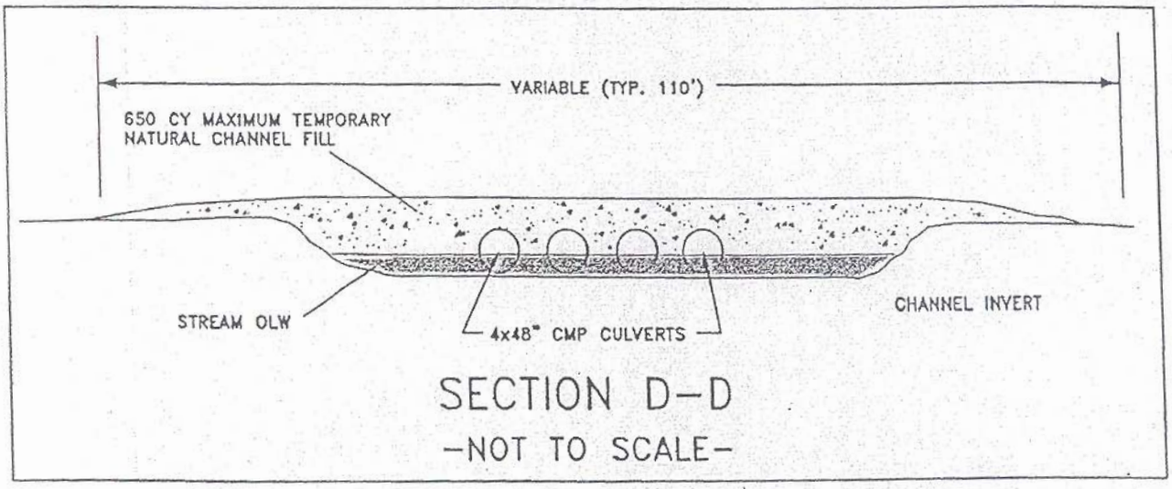


SECTION B–B – FOLLOWING HARVEST
-NOT TO SCALE-

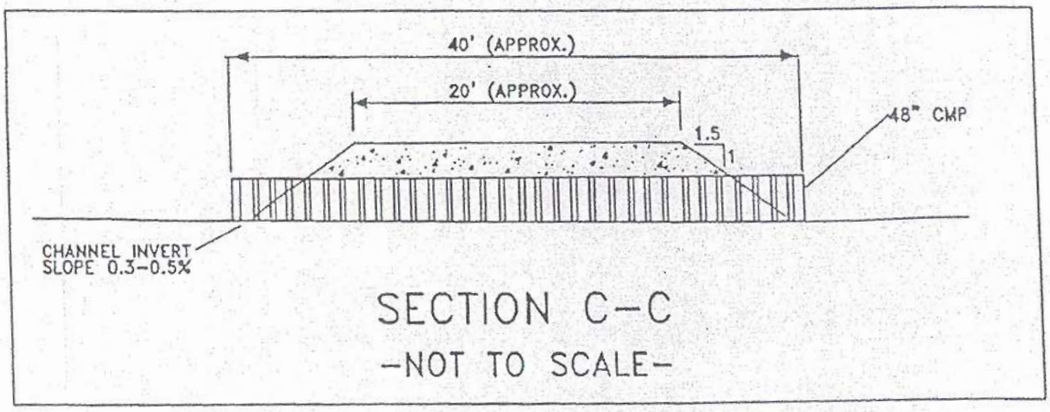
SUGNET ENVIRONMENTAL INC. © 2004	TYPICAL MINING AREA LEAVING NATURAL DIKE IN PLACE	FIGURE 9
	BAR-D 404 PERMIT APPLICATION	*Source: Sugnet Environmental Inc., 1996*



PLAN VIEW
-NOT TO SCALE-

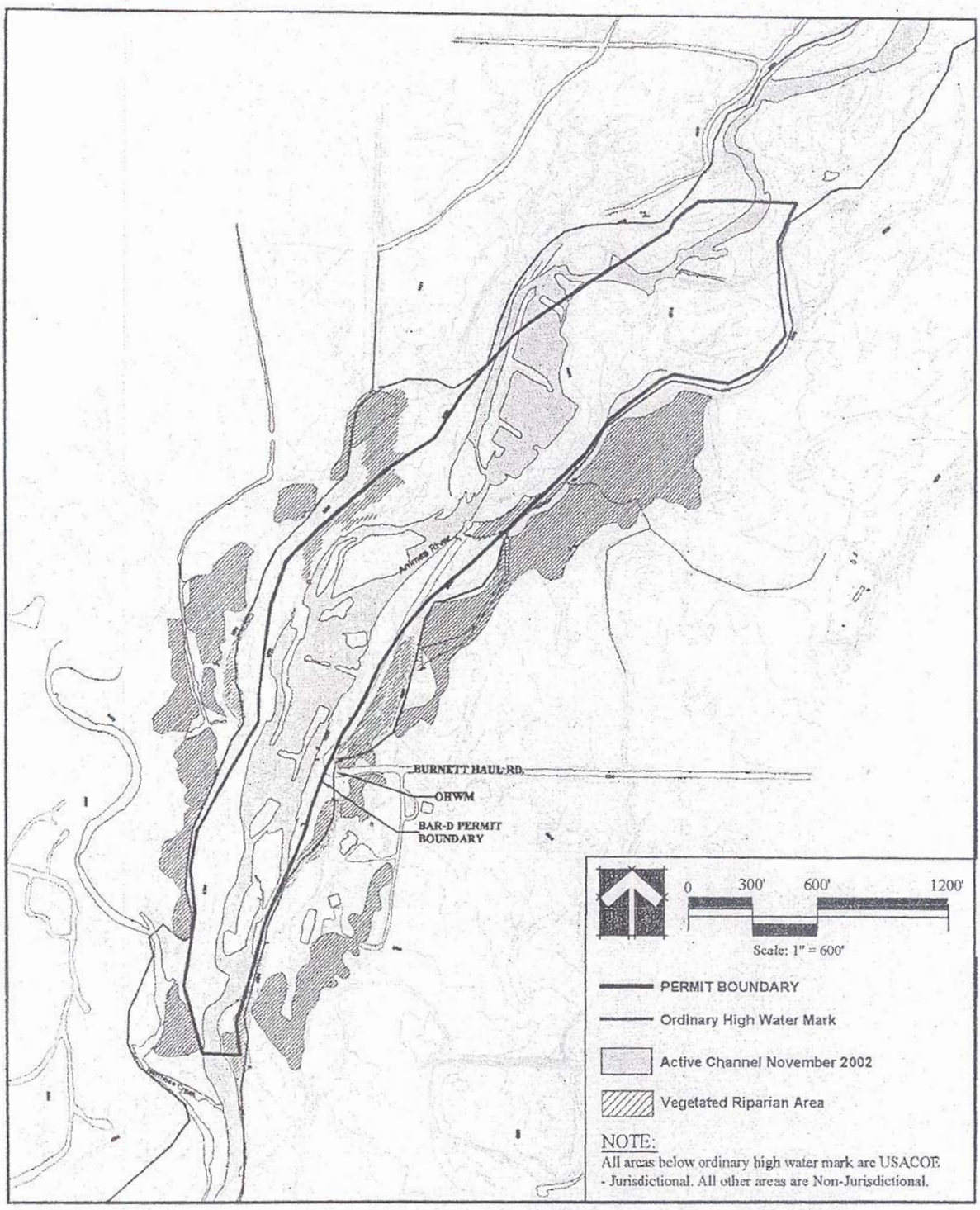


SECTION D-D
-NOT TO SCALE-



SECTION C-C
-NOT TO SCALE-

SUGNET ENVIRONMENTAL INC. © 2004	TYPICAL TEMPORARY LOW WATER CROSSING	FIGURE 10
	BAR-D 404 PERMIT APPLICATION	*Source: Sugnet Environmental Inc., 1996*



SUGNET ENVIRONMENTAL INC. © 2004	DELINEATION OF VEGETATED RIPARIAN AREAS BAR-D 404 PERMIT APPLICATION	FIGURE 11 *Digital topographic data provided Aerometric. Riparian Wetlands provided by Sugnet Environmental Inc., 2004*