



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Ecological Services Field Office  
10711 Burnet Road, Suite 200  
Hartland Bank Bldg.  
Austin, Texas 78758

MAY 09 1997

Mr. David Armbrust  
Strasburger & Price  
2600 One American Center  
600 Congress Avenue  
Austin, Texas 78701-3248

Dear Mr. Armbrust:

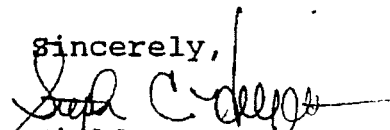
We were recently informed of a sediment discharge event from the "Pod 9 draw" of Barton Creek Properties (see enclosed letter dated April 30, 1997 from Save Our Springs Alliance). Pursuant to the implementing agreement for the Barton Creek Habitat Conservation Plan, we believe this event may have exceeded the goal of non-degradation. Thus, we would like to schedule a meeting as soon as possible to discuss the event, what measures were taken to remediate the situation, and what modifications were made to prevent similar events from occurring.

We regret that Barton Creek Properties did not notify us of this event so that we could ensure compliance with the "no surprises" policy of their endangered species permit. In the future, we would appreciate immediate notification of such incidents.

We understand the Texas Natural Resource Conservation Commission and City of Austin have been investigating the sediment discharge event and would like to invite them to present their findings on this issue. As you are aware, the Barton Springs salamander has been listed as endangered, and we are actively promoting cooperative partnerships among federal, state, and local agencies and other affected parties to ensure its long-term protection.

Please contact us as soon as possible to schedule a meeting. If you have any questions or comments, please contact Lisa O'Donnell at 512/490-0057.

Sincerely,

  
Field Supervisor

cc: Martin Steinmetz, DOI, Solicitor, Tulsa, Oklahoma

Barry R. McBee, *Chairman*  
R. B. "Ralph" Marquez, *Commissioner*  
John M. Baker, *Commissioner*  
Dan Pearson, *Executive Director*



## TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

*Protecting Texas by Reducing and Preventing Pollution*

June 18, 1997

Mr. Tim Jones  
2701 Nottingham Lane  
Austin, TX 78704

Re: Investigation Report Complaint No. 119700417

Dear Mr. Jones:

The Austin regional office has completed a final investigation in response to your concern regarding illegal discharges at "Pod 9" in Section E, Phase 1 of the Barton Creek Properties development. The project site is located approximately two miles south of RM 2244 on Barton Creek Boulevard in Travis County. Enclosed is a copy of the final investigation report indicating the results of the investigation.

Thank you for contacting the Texas Natural Resource Conservation Commission with your concerns. If you have any questions regarding this investigation please feel free to contact Melissa Lopez at (512) 339-2929.

Sincerely,

A handwritten signature in black ink, appearing to read "Patricia M. Reeh".

Patricia M. Reeh  
Water Program Manager

PMR/mml

Enclosure

ALLEGED SOURCE: FM Properties/Barton Creek Properties  
LOCATION: Within the tributary in the proposed Section E. Also identified as "Pod 9".  
CITY, COUNTY: Austin, Travis County - 227  
INVESTIGATION DATE: 4/21/97, 4/30/97, 5/1/97, 5/2/97, 5/9/97, 5/12/97, 5/14/97, 5/20/97,  
5/30/97, 6/06/97  
VIOLATION FOUND: Texas Water Code 26.121  
COMPLAINT NUMBER: 119700344  
INVESTIGATOR(S): Melissa M. Lopez

---

**INITIAL PROBLEM:** Silt generated by construction activities is being discharged from into Barton Creek downstream of Pod 9.

**SUMMARY OF INVESTIGATION:**

Friday, April 18, 1997

Oscar Garza, inspector with the City of Austin (COA) Drainage Utilities Division (DUD), reported a sediment discharge from detention pond 9. Both J.C. Cradit, regional inspector on spill duty, and David Barker, of the Emergency Spill Response Team were contacted by Mr. Garza. Mr. Garza stated that he was reporting the release in response to a complaint he had received. Mr. Garza was unable to identify the location of the pond and stated that the release had occurred within the last two hours. He also stated that the discharges had ceased. Mr. Cradit and Mr. Barker concurred that sediment releases could not be appropriately addressed by emergency spill response, particularly since the location of the pond could not be provided and the incident was no longer occurring. Barton Creek Properties/Freeport McMoran did not report the incident.

Monday, April 21, 1997

Chuck Lesniak, an inspector with the City of Austin's Drainage Utilities Division, contacted the regional office to inquire about the status of the complaint. He believed the original complainant who contacted the city had filed a formal complaint with the regional office on Friday, April 18, 1997. Melissa Lopez, regional inspector, informed Mr. Lesniak that the regional office had not received this complaint, but that she would follow-up on the inquiry. Shortly after this conversation, the original complainant contacted James Bice, regional inspector, and lodged a formal complaint against Barton Creek Properties for discharging sediment at "Pod 9". "Pod 9" is a designation which the complainant had previously assigned to a segment of a tributary to Barton Creek during a personal study of the area.

Melissa Lopez contacted Lisa Foster, Water Quality Manager for Freeport McMoran's (FM) Barton Creek Properties, and scheduled a site inspection. Regional inspectors Melissa Lopez and Christine Ellington met with Lisa Foster and Keith Thornsberry, Project Engineer with Rust/Lichliter Jameson, at the site at 2:00 p.m. and conducted a site inspection.

Complaint #119700417

June 17, 1997

Ms. Foster cited several circumstances which led to the discharge. The site had received 2.7 inches of rain over a three day period, which not only provided surface sheet flow, but also produced enough water to recharge shallow perched aquifers. (Refer to attached rainfall measurements provided by FM). The area excavated for the water quality pond quickly filled with water from both sources. The splitter box and culvert run are the only areas of the basin which were excavated, the retention/irrigation basin had not been excavated. The proposed water quality pond will span the entire width of the drainage area which flows to the head of the tributary. The outfall of the culvert box is 20 feet up gradient of the tributary.

The problem was compounded by the activities of Keystone Contractors. Keystone had been trenching utility lines up gradient of the site. The utility trenches also filled with groundwater and the contractor had been pumping out and discharging silt laden water to the natural tributary which flows to this portion of the development.

In an attempt to control and divert the water collecting in the basin pit, Ms. Foster and Mr. Thornsberry decided to excavate a side channel on the west side of the pond. The plan was to divert the flow and pump the collected water to another area. However, the pump did not function properly and the additional excavation activities exacerbated the siltation problem.

The following conditions were observed:

- An area of approximately 20 acres drains to this portion of the tributary. The entire site has been graded and consists of loose and unstabilized soils.
- In approaching the site, the inspectors noted that the temporary erosion and sedimentation controls at other portions of the development appeared to be properly placed, installed, and maintained.
- The rock berm and silt fencing installed across the tributary were not capable of handling the amount of flow generated by the rain events and groundwater discharges.
- The silt fence immediately up gradient of the rock berm had collapsed and the flow had bypassed the sides and top of the rock berm.
- The up gradient and down gradient waters were extremely turbid. Silt deposits ranging from 1/2 inch to at least one foot thick were observed up to 600 feet down gradient of the rock berm. The dense vegetation and embankments of silt restricted access and the inspection of the tributary was limited. The amount of silt and degree of turbidity was constant throughout this 600 foot segment.

Complaint #119700417  
June 17, 1997

- Groundwater was discharging steadily from the west side of the culvert excavation, creating a constant source of flow toward the tributary.

As a remediation strategy, Mr. Thornsberry proposed to lengthen the rock berm at least five feet on both ends to thoroughly encompass the width of the tributary. In addition, the height of the berm would also be raised by at least 5 feet. Another row of silt fencing was proposed for the down gradient side of the berm and an additional rock berm would also be installed at the outfall of the culvert excavation.

Trucks loaded with aggregate for upgrading the berm were at the site as the inspectors concluded the investigation. Both Ms. Foster and Mr. Thornsberry agreed to keep the inspectors apprised of any problems and to notify them when the repairs had been completed.

Wednesday, April 23, 1997

Melissa Lopez had not heard from either Ms. Foster or Mr. Thornsberry and she attempted to contact them for a status report of the repairs. Ms. Foster reported that they were having problems with the repairs because of the amount of flow discharging from the perched aquifer.

Thursday, April 24, 1997

Ms. Lopez contacted Lisa Foster for an update of site activities. Ms. Foster stated that they had decided to install three additional down gradient silt fences and were attempting to build another rock berm. Nine additional truck loads of aggregate were needed to complete the upgrade to the primary berm. They were trying to complete the repairs that evening since rainfall was forecast for Friday and throughout the weekend.

Friday, April 25, 1997

Very heavy rainfall occurred throughout the area. Melissa Lopez left a voice mail message for Ms. Foster to contact Carolyn Runyon, regional inspector, if site conditions changed.

Wednesday, April 30, 1997

Melissa Lopez and Christine Ellington inspected the site and found that all efforts to retain sediment had completely failed. While the rock berm was structurally intact, portions of the down gradient fencing were torn and had collapsed. The site had not recovered from the storm events which had occurred over the weekend. Up gradient and down gradient flow was high, strong, and extremely turbid. All silt fencing and the rock berm had been circumvented. With the exception of the smaller

Complaint #119700417  
June 17, 1997

rock berm at the outfall, all of the proposed measures had been installed. It is the opinion of both inspectors that the smaller berm would not have provided any appreciable effect if it had been installed. Another collection pit was excavated northeast of the culvert outfall and south of the rock berm in an attempt to pump and collect water. This proved unsuccessful because the hydraulic gradient drained the water from the collection pit back into the basin excavation. During the inspection, workers were installing rebar within the culvert box excavation. At Ms. Lopez's direction, all construction in the immediate area was halted until the sedimentation was attenuated. Mr. Thornsberry stated that the additional silt fencing would be installed immediately in the morning. He stated that they were having recurrent problems with Keystone Contractors. He also stated that Keystone was continuing to empty silt laden water taken from the utility trenches into the tributary, despite daily reprimands from Ms. Foster. Ms. Foster reported that these activities are occurring up gradient of the water quality pond. Regional staff has not observed these activities during the inspections.

Thursday, May 1, 1997

Ms. Lopez contacted Ms. Foster about the status of the site. Ms. Foster reported that additional silt fencing would be installed up gradient of the rock berm and confirmed that all construction had ceased. Additionally, a silt fence ring had been installed at the top of the hill to filter water which would be pumped from a pit dug at the culvert box outfall.

Christine Ellington and Melissa Lopez returned to the site at 4:00 p.m. and found that conditions had improved substantially. Mr. Thornsberry stated that they had begun to install the fencing at noon. Substantial settling had occurred and almost all of the flowing water was clear. A small rock berm had been installed at the basin outfall, an additional length of silt fencing had been installed approximately 10 feet up gradient of the primary rock berm, and an up gradient area had been graded to facilitate pooling and settling. The surface flow was constant and moderate, which prevented repairing the tears in the second down gradient silt fence. Significant groundwater flow was still occurring from the west and east walls of the sedimentation basin excavation. It did not appear to have diminished significantly since April 21, 1997. Mr. Thornsberry indicated that David Norris, Freeport McMoran's environmental expert, will be at the site on Tuesday, May 6, 1997.

Friday, May 2, 1997

Christine Ellington and Melissa Lopez visited the site and found that conditions had improved. All down gradient flow is clear. The down gradient pool remains turbid and does not appear to have settled. Mr. Thornsberry stated that if conditions are favorable, they will attempt to pump enough water out of the basin excavation to allow them to pour the remainder of the concrete slab. However, this will increase the turbidity for at least 48 hours. They plan to lay rebar over the ground prior to pouring to try and minimize disturbing the silt. If rain does occur or is forecast, they will wait until

Complaint #119700417  
June 17, 1997

Monday, May 12, 1997, before considering any action. Two pumps will be installed to transport the water to the silt fence ringed filter area, the discharged water will flow downhill and be intercepted by another segment of silt fencing before encountering the tributary. Ms. Foster stated that the process will be under surveillance at all times. She stated that she would contact TNRCC prior to pumping so that we could observe, if we wished. Ms. Foster and Mr. Thornsberry agreed to keep TNRCC apprised of all activities.

May 7, 1997

Ms. Lopez contacted Ms. Foster and informed her that pumping and discharging water from the basin would constitute an unpermitted point source discharge. Ms. Lopez directed her to desist from initiating any such discharges. Ms. Foster asked for guidance on resuming construction of the water quality basin. Ms. Lopez advised her to refrain from disturbing the area.

May 9, and 12, 1997

Site conditions were photographed. No construction has been conducted in the immediate area of the retention/irrigation basin, however, construction up gradient of the pond has continued since April 18, 1997.

May 14, 1997

Ms. Lopez and Ms. Foster walked down the tributary to approximately 50 feet from the convergence with Barton Creek. The depth of the water and the topography prevented the inspector from walking to the confluence with Barton Creek. The banks were approximately 60 feet high and could not be accessed. Sediment covered the creek bed along the entire length, ranging from one inch to one foot thick. The thickest layers were found within 600 feet down gradient of the rock berm. The confluence with Barton Creek is estimated to be approximately one-third of a mile long.

May 20, 1997

Ms. Lopez accompanied Mr. Chris Ruehl, an EPA Region 6 inspector, during his inspection of the site. The EPA received also received a complaint and conducted an inspection to determine FM's compliance with their NPDES permit. Mr. Ruehl found minor administrative violations regarding updating the E & S inspection records and the site plan. Mr. Ruehl also stated that the temporary controls which were in place were inappropriate because they could not handle the amount of flow coming from the site. He concurred with regional staff that a temporary basin would have been suitable, given the size of the drainage area. Mr. Ruehl was concerned that future storm events would flush the large amounts of sediment immediately down gradient of the

Complaint #119700417  
June 17, 1997

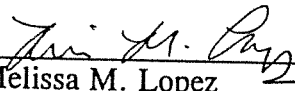
rock berm further down stream. He directed Ms. Foster to remove the sediment and repair the silt fencing.

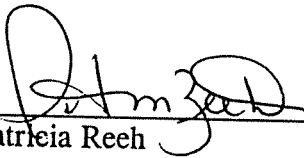
May 30, 1997

Several storm events occurred since May 20, 1997. The culvert box slab was almost completely poured, the side forms for the culvert box are in place and the up and down gradient flow is clear.

**RESULTS OF INVESTIGATION:** Since April 21, 1997, regional staff has observed repeated occurrences of excessive and uncontrolled sediment discharges resulting from development activities at this site into a tributary of Barton Creek. Sediment laden waters were pumped from utility trench excavations directly into the tributary on at least two occasions and inappropriate temporary erosion and sedimentation controls were installed.

**CLOSURE COMMENTS:** Referral for Enforcement Action was submitted on June 11, 1997. All photo documentation for the complaint was forwarded with the EAR. Follow-up inspections will continue to monitor site conditions.

  
\_\_\_\_\_  
Melissa M. Lopez  
INVESTIGATOR

  
\_\_\_\_\_  
Patricia Reeh  
AUSTIN REGION PROGRAM MANAGER



M E M O R A N D U M

To: Nancy L. McClintock, Division Manager  
Environmental Resources Management Division

From: Scott E. Hiers, Environmental Quality Specialist  
Environmental Resources Management Division

Date: April 24, 1997

Re: Lab results for turbid samples collected at POD 9

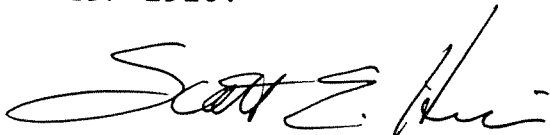
I investigated Tim Jones' report of turbid water discharging into Barton Creek from the POD 9 tributary. After visiting the site on April 21st, I confirm Mr. Jones observations.

I observed the POD 9 turbidity discharging water carrying high sediment load. As a result, sand-size sediment is being deposited at the confluence with Barton Creek. However, a large amount of sediment is remaining suspended and is being transported downstream. As indicated by the high total suspended solid level recorded for a sample collected approximately 150 feet downstream. Samples were also collected from the POD 9 tributary, and above the tributary's confluence with Barton Creek. The following are the results:

	5 feet <u>Above POD 9</u>	<u>POD 9</u>	150 feet <u>Below POD</u>
Turbidity (NTUs)	2.	300.	66.
Total Suspended Solids (mg/l)	<0.5	95.0	88.0
Total Dissolved Solids (mg/l)	291	285	293
Conductance (uS)	577	565	580
Orthophosphorus (mg/l)	0.01	0.01	0.01
Nitrate-nitrogen (mg/l)	<0.1	<0.1	0.1

The nutrients and dissolved solids are at "normal" levels, but turbidity and total suspended solids are above the levels the Division normally observes for Barton Creek during baseflow. Turbidity and total suspended solids measurements collected from Barton Creek and its tributaries from 1991 to 1995 range from 0.15 to 19 NTUs and 0.25 mg/l to 16 mg/l; respectfully. The levels reported for POD 9 and Barton Creek below the confluence with POD 9 are well above these ranges.

If you have questions or need further assistance, please call me at 499-1916.



Scott E. Hiers

Handwritten calculations and notes:

$$\frac{081}{5} = 36$$
$$\frac{075}{360} = 0.2083$$

days



FW-ES	
FS	4/30
AFS	
ALL	
ALISA	AMS 5-
LISA	
OAST	
FILE	
NO.	
DUE	

April 30, 1997

Steve Helfert  
 Texas Office Administrator  
 U.S. Fish & Wildlife Service  
 Austin, Texas

Via Fax and Hand-Delivery

**Officers**

- Kirk Mitchell  
President
- Mary Arnold  
Vice President
- Dirk Heinen  
Treasurer
- Vivian Roop  
Secretary

**Board Members**

- Steve Abbot
- Jon Beal
- Brenda Bellocchio, D.D.S.
- Dick DeGuerin
- Steven Feld, Ph.D.
- Bryan Hale
- Janet G. Hampel
- Virginia Ivey
- Manssa Kimberlin
- Mark Kirkpatrick, Ph.D.
- Michael Maguire
- Todd Main
- Scott Mitchell
- Nancy Scanlan
- A.R. (Babe) Schwartz
- John A. Watson

**RE: Complaint and Request for Immediate Enforcement Action to Enjoin Further Pollution of Barton Creek**

Dear Mr. Helfert:

On April 18, 1997 Tim Jones documented by videotape a major pollution event on Barton Creek in Travis County. A copy of a portion of that tape is enclosed. The tape shows the otherwise clear and beautiful Barton Creek being ruined by construction discharge from development at FM Properties/Barton Creek Properties land. The area is known as "Pod 9" as named by FM Properties and the discharge is entering Barton Creek from the named "Pod 9 draw."

The pollution was confirmed by City of Austin Environmental Resources Management personnel in the attached memo dated April 24, 1997. It is our understanding that TNRCC investigators have also confirmed the pollution.

As can be seen from the City memo, above the point of pollution discharge total suspended solids ("TSS") in Barton Creek was below the level of detection (less than 0.5 milligrams per liter). The video show how clear and beautiful the creek was above the discharge. Below the point of pollution discharge TSS was measured at 95 mg/l. The City's memo also shows that the discharged pollutants are very fine and are being carried considerable distances downstream. Fifty yards downstream the TSS was measured at 88.0 mg/l, a negligible drop from the point of discharge.

The SOS Alliance urges you to take immediate action to assure FM Properties is complying with the Endangered Species Act in all respects. It is our understanding that FM Properties has failed to carry out the water quality monitoring program that was supposed to have begun over a year ago. It is further our understanding that FM Properties representatives have refused to implement a meaningful monitoring program, as developed by Fish & Wildlife Service and U.S. Geological Service scientists and, instead, have sought to implement a minimal monitoring program

Finally, we ask that you confirm in writing that FM Properties' ESA Section 10(a) permit for take of golden-cheeked warblers does not relieve FM Properties of their duty to protect the Barton Springs salamander. FM Properties has apparently claimed the contrary in the press.

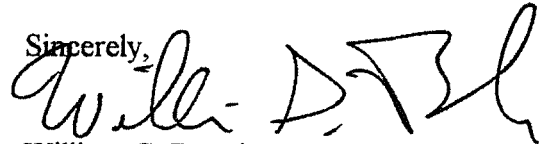
This pollution event makes clear the threat to Barton Creek and Barton Springs from development upstream, especially from large scale development like that proposed by FM Properties.

You should know that FM Properties has barely begun the development they are proposing for the Barton Creek watershed. If this kind of pollution has already occurred, then the problems are only likely to increase.

While we are filing similar complaints and requests for prosecution with the TNRCC and the U.S. EPA, the Fish & Wildlife Service has independent enforcement obligations under the Endangered Species Act. We expect that you will take all necessary actions.

We look forward to your prompt response.

Sincerely,

A handwritten signature in black ink, appearing to read "William G. Bunch". The signature is stylized and cursive, with a large, sweeping flourish at the end.

William G. Bunch

Enclosures



## MEMORANDUM

To: Nancy L. McClintock, Division Manager  
Environmental Resources Management Division

From: Scott E. Hiers, Environmental Quality Specialist  
Environmental Resources Management Division

Date: May 13, 1997

Re: POD 9 stormwater water chemistry results

As part of a follow-up investigation of turbid water discharges from the POD 9 tributary, stormwater samples were collected on May 9th, 1997. After the Barton Creek Watershed received approximately 1.51-inches of rainfall, Mike Lyday and I collected stormwater samples from the POD 9 and Rob Roy tributaries. Samples were also collected from the mainstem of Barton Creek above and below each tributary's confluence. The Rob Roy tributary was sampled for comparative reasons. The tributary is fully-developed with no on-going construction, and is located approximately 1.5 miles downstream from POD 9.

The following are the water chemistry results:

	5 ft. <u>Above POD 9</u>	<u>POD 9</u>	10 ft. <u>Below POD 9</u>
Turbidity (NTUs)	14	450	84
Total Suspended Solids (mg/l)	26.0	890.0	166.0

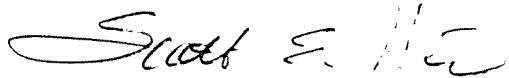
  

	5 ft. Above <u>Rob Roy</u>	<u>Rob Roy</u>	5 ft. Below <u>Rob Roy</u>
Turbidity (NTUs)	56	4.6	33
Total Suspended Solids (mg/l)	60.0	2.4	33.0

The total suspended solids result for POD 9 is about 370 times greater than the Rob Roy tributary, and about 9 times higher than the baseflow results collected on April 21, 1997 and reported to

you in a memorandum from me on April 24th. In addition, Barton Creek's water quality appears to be influenced by turbid discharges from POD 9 as indicated by the increase in turbidity from 14 NTUs above POD 9 to 56 NTUs above Rob Roy. This same trend is also seen in the total suspended solids results.

If you have any questions, please call me at 499-1916.

A handwritten signature in cursive script that reads "Scott E. Hiers".

Scott E. Hiers  
Environmental Quality Specialist



**MEMORANDUM**

To: Nancy McClintock, Division Manager  
Environmental Resource Management Division

From: Ellen Geismar, Environmental Quality Specialist  
Environmental Resource Management Division

Date: November 24, 1997

Re: POD 9 Stormwater chemistry results

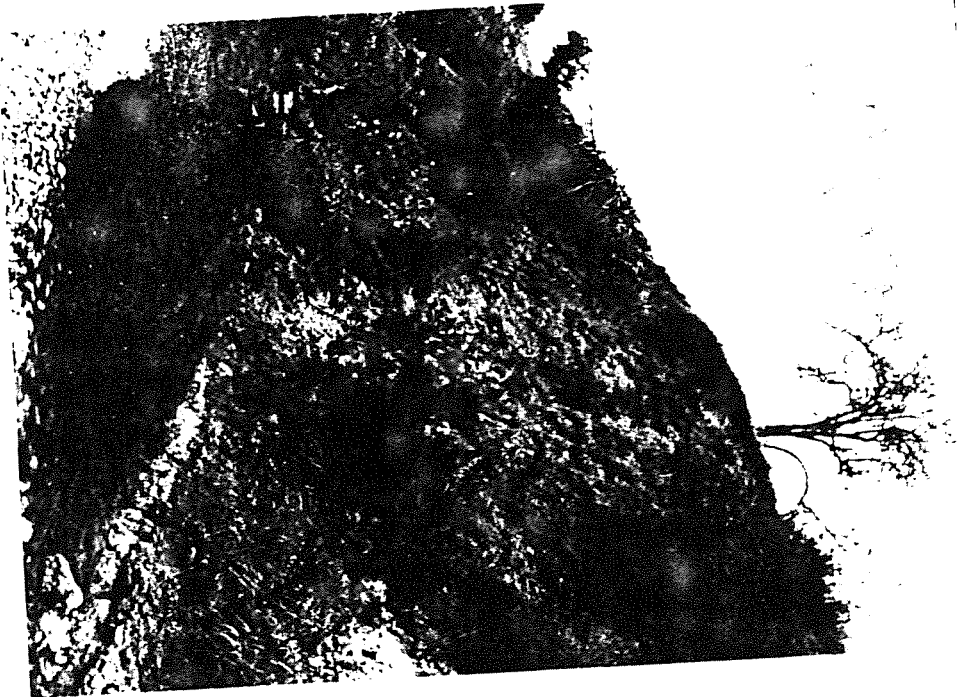
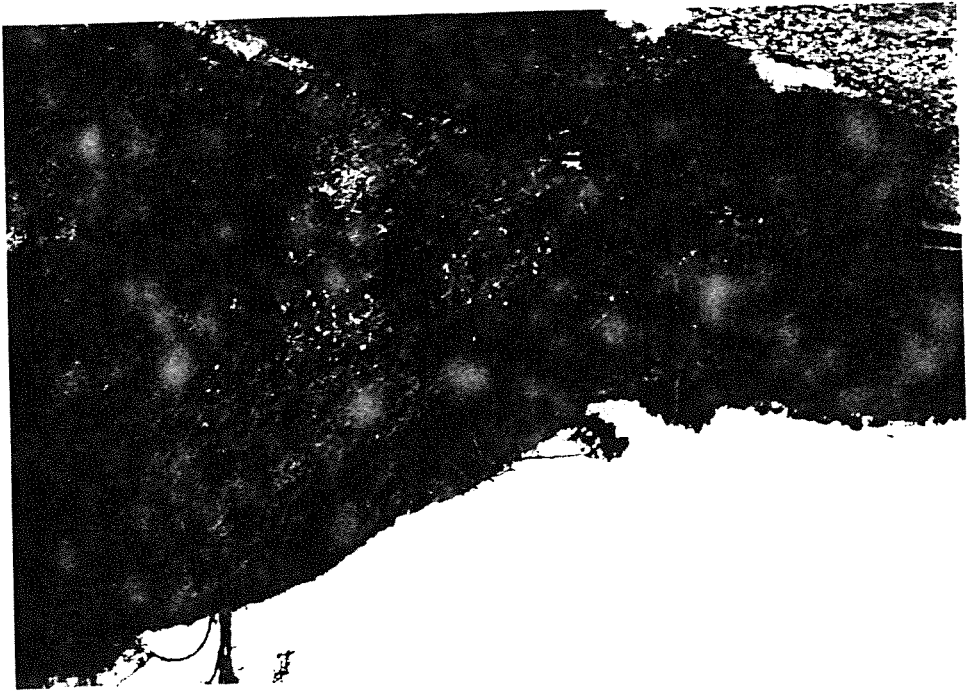
As part of a follow-up investigation of turbid water discharges from the Pod 9 tributary on Barton Creek, post storm samples were collected on November 13, 1997. After the Barton Creek watershed received approximately three inches of rain in the period between November 8-13, 1997, samples were collected on the Pod 9 tributary, at the mouth of Pod9, approximately fifty feet upstream of the mouth and approximately 500 feet below the mouth at the end of the pool. Results of total suspended solids analyses run in the Drainage Utility laboratory are shown as follows.

Pod 9 tributary- 20.2 mg/l  
Mouth of Pod 9- 30.2 mg/l  
50' upstream of mouth of Pod 9- <0.5 mg/l  
500' below Pod 9- 2.2 mg/l

Base flow results for total suspended solids between July and September of 1997 range between <0.5 through 2.4 mg/l.

If you have any questions please call me at 499-6572.

*Ellen L. Geismar*  
Ellen Geismar  
Environmental Quality Specialist



9/25/97 more photos available  
for

10/9/97  
2/11/14/97



0/25/97



CONTENTS

REFERENCE

DATE

9/25/97 Pod 9

water collection -

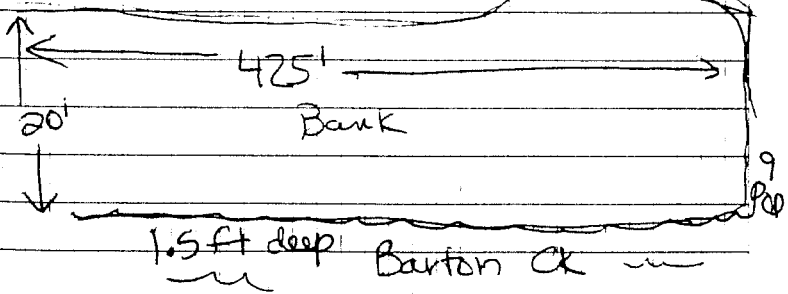
Pod 9 area hydroaxed -

Photos taken -

Bare hill

10' wide w/ steep slope

to Pod 9  
TID.



Bank cliff 20" high  
 at top of cliff - trees have been  
 cleared w/ hydro mulching area  
 w/ clearing directly up to  
 bank of ca. 425' additional  
 area mulched but a  
 buffer is left. Several trees  
 knocked over edge of cliff into  
 creek.

10/8/97 Pod 9

many new houses framed  
water collection. nutrients.

TS - pH - spec cond.

nutrients - temp. TC.

flow -

10/9/97 - Pod 9 - 1.25<sup>th</sup>

no visible difference in  
flows or turbidity.

still no flow to BC creek.

Photos taken of cleft

# 6-12 -

no nutrients done

10/16/97 - Pod 9 -  
flowing into creek

photos taken # 21-22

nutrients done in lake, 1<sup>st</sup>

cleft, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>.

but not entire flow.

10/30/97 Field 9 LAE

Conducted Canyon Study.

9/28/97 - Field 9 LAE

9/29/97 - Field 9 LAE. Pumps

9/30/97 - field 9 Lab. Pumping.

Pod 9

11/4/97 - Flow & Field  
measurements + TS

11/13/97 - flow & field mea-  
surements

storm sample

sediment - makes approx  
w/ turbidity test post

downstream by Pod 9

11/16/97 rain in 5 days -

BC DRY CREEK CLEAR ABOVE

7/16/97 Samples brought into

Lab for analysis.

11/17/97 Pod 9 Water sample taken

for TS - appears to

have cleared - sediment

settled on creek bed -

at mouth of Pod 9 - 1/16

Bull Creek

6502

Franklin = 1836

L. Johnson

"

1/28/98 - Flow water collected at  
 Jans Johnson Spring  
 L.J. S.T.  
 Camelot  
 Rob Roy  
 NEED  
 Flows  
 Campbells Hole  
 Back Door  
 Mouth  
 Sediment; Back Door

11 to 5 bank  
 30' up  
 30' down  
 all of very fine  
 material

11/25/97 - Pool 9  
 Collected H<sub>2</sub>O for nutrients  
 Strals, TSS. pH, TDS comp  
 Slow, no minerals

1/26/98 - water collection all pools  
 1/27/98 - ~~water~~ collection  
 Little Passano  
 Stark Trail  
 grape myrtle  
 Little Barton  
 Sediment collected  
 at all Pools  
 except Back Door -

	##	04/08/92	###	##	04/20/93	####	##	04/22/93	####	##	01/06/94	##	04/14/94	##	06/29/94	##	11/28/94	##	11/28/94	##	04/12/95	
POD 9	<																					
AMMONIA AS N		0.01	MG/L					0.01	MG/L								0.01	MG/L				0.02
AMMONIA AS N-dup																						
BIOCHEMICAL OXYGEN DEMAND																						
CHEMICAL OXYGEN DEMAND																						
DISSOLVED OXYGEN																						
FECAL COLIFORM BACTERIA																						
FLOW																						
LEAD																						
NITRATE AS N		0.05	MG/L		0.03	MG/L		0.05	MG/L													0.09
NITRATE AS N-dup																						
NITRATE/NITRITE AS N																						
ORGANIC CARBON																						
ORTHOPHOSPHORUS AS P		0.04	MG/L		0.04	MG/L		0.04	MG/L													0.01
ORTHOPHOSPHORUS AS P																						
PH		8.1	None					8.1	None													8.1
PHOSPHORUS AS P																						
SPECIFIC CONDUCTANCE																						
TOTAL DISSOLVED SOLIDS		230	MG/L																			250
TOTAL DISSOLVED SOLIDS																						
TOTAL KJELDAHL NITROGEN AS N																						
TOTAL PETROLEUM HYDROCARBONS																						
TOTAL SUSPENDED SOLIDS		3.7	NTU					3.7	NTU													1
TOTAL SUSPENDED SOLIDS																						
TURBIDITY																						
TURBIDITY																						
TURBIDITY																						
WATER TEMPERATURE																						
ZINC																						



06/27/97	07/02/97	07/02/97	07/10/97	07/10/97	07/10/97	07/17/97	07/24/97	07/24/97	08/04/97	08/07/97	08/07/97	08/07/97	08/14/97
MG/L	0.01 MG/L	0.01 MG/L	<	0.01 MG/L	0.01 MG/L	0.01 MG/L	0.03 MG/L	0.01 MG/L	0.01 MG/L	0.02 MG/L	0.02 MG/L	0.01	0.01
MG/L	6.5 MG/L	6.9 MG/L	10.4 MG/L	10.4 MG/L	10.4 MG/L	10.4 MG/L	31 Colonies/l	31 Colonies/l	31 Colonies/l	31 Colonies/l	31 Colonies/l	31 Colonies/l	31 Colonies/l
MG/L	0.1 MG/L	0.1 MG/L	<	0.1 MG/L	0.1 MG/L	0.1 MG/L	0.1 MG/L	0.1 MG/L	0.1 MG/L	0.1 MG/L	0.1 MG/L	0.1	0.1
MG/L	0.03 MG/L	0.03 MG/L	0.03 MG/L	0.03 MG/L	0.03 MG/L	0.03 MG/L	0.04 MG/L	0.02 MG/L	0.02 MG/L	0.02 MG/L	0.02 MG/L	0.05	0.05
None	475 None	525 None	634 None	634 None	634 None	634 None	565 None	7.8 None	7.8 None	8 None	8 None	7.8	7.8
MG/L	241 MG/L	262 MG/L	316 MG/L	316 MG/L	316 MG/L	316 MG/L	286 MG/L	316 MG/L	316 MG/L	316 MG/L	316 MG/L	595	307
MG/L	0.4 MG/L	1.7 MG/L	0.8 MG/L	0.8 MG/L	0.8 MG/L	0.8 MG/L	0.7 MG/L	2.4 MG/L	2.4 MG/L	2.4 MG/L	2.4 MG/L	0.3	0.3
FTU	1 FTU	2 FTU	1 FTU	1 FTU	1 FTU	1 FTU	1 FTU	2 FTU	2 FTU	2 FTU	2 FTU	1.1	1.1
NTU	2.1 NTU	2 NTU	1.5 NTU	1.5 NTU	1.5 NTU	1.5 NTU	2.5 NTU	1.5 NTU	1.5 NTU	1.5 NTU	2.1 NTU	2	2
Deg. Celsi	24 Deg. Celsi	23 Deg. Celsi	24 Deg. Celsi	24 Deg. Celsi	24 Deg. Celsi	24 Deg. Celsi	24 Deg. Celsi	23.5 Deg. Celsi	23.5 Deg. Celsi	24 Deg. Celsi	24 Deg. Celsi	23	23

08/14/97	08/20/97	08/20/97	08/20/97	08/28/97	08/28/97	08/28/97	08/28/97	09/04/97	09/04/97	09/11/97	09/11/97	09/25/97	09/25/97	10/02/97	10/02/97	10/09/97	10/09/97		
MG/L	<	0.01	MG/L	<	0.01	MG/L	<	0.01	MG/L	0.01	MG/L	<	0.01	MG/L	0.02	MG/L	0.02	MG/L	
MG/L	<	0.1	MG/L	<	0.1	MG/L	<	0.01	MG/L	0.1	MG/L	<	0.1	MG/L	0.1	MG/L	0.1	MG/L	
MG/L	<	0.04	MG/L	<	0.02	MG/L	<	0.08	MG/L	0.04	MG/L	<	0.04	MG/L	0.01	MG/L	0.03	MG/L	
None		7.97	None					7.97	None	8.04	None		8.04	None	7.88	None		7.98	
uS/cm		630	uS/cm		568	uS/cm		617	uS/cm	659	uS/cm		631	uS/cm	624	uS/cm		634	
MG/L	<	0.5	MG/L		1.3	MG/L		310	MG/L	331	MG/L		631	MG/L					
MG/L	<	0.5	MG/L		1.3	MG/L		1.5	MG/L	0.8	MG/L		2.759	MG/L	7.4	MG/L			
NTU		1	FTU		2	FTU		1	FTU	3	FTU		1	FTU	1	FTU			
FTU		28	NTU		1.8	NTU		1	FTU	32	NTU		1.9	NTU	2	FTU			
Deg. Celsi		26	Deg. Celsi					23.9	Deg. Celsi	21.7	Deg. Celsi		20.3	Deg. Celsi	24.8	Deg. Celsi		24.4	
																			0.3375

10/09/97	10/16/97	10/16/97	10/30/97	10/30/97	11/06/97	11/06/97	11/13/97	11/20/97	11/20/97	11/25/97	11/25/97	12/04/97
Cubic Feet	<	0.02 MG/L	0.02 MG/L	0.02 MG/L	<	<	0.01 MG/L 0.01 MG/L	0.03 MG/L	0.03 MG/L	<	0.01 MG/L	0.01
Cubic Feet	0.308	0.01	0.01	0.01	1 Colonies/1 0.03 Cubic Feet	0.33 Cubic Feet	0.33 Cubic Feet	45 Colonies/1 0.11 Cubic Feet	45 Colonies/1 0.11 Cubic Feet	140 Colonies/1 0.03 Cubic Feet	140 Colonies/1 0.03 Cubic Feet	3 0.2
	0.1	0.1	0.1	0.1	0.2 MG/L 0.3 MG/L	0.2 MG/L 0.3 MG/L	0.2 MG/L 0.3 MG/L	0.1 MG/L	0.1 MG/L	0.1 MG/L	0.1 MG/L	0.1
None	0.02	0.02	0.02	0.02	0.02 MG/L 0.02 MG/L	0.02 MG/L 0.02 MG/L	0.02 MG/L 0.02 MG/L	0.02 MG/L	0.02 MG/L	0.02 MG/L	0.02 MG/L	0.05
uS/cm	7.9	7.93	7.93	7.93	7.87 Standard	8.12 Standard	8.12 Standard	8.08 None	8.08 None	6.34 Standard	6.34 Standard	7.87
	581	596	596	596	619 uS/cm 309 MG/L	520 uS/cm 274 MG/L	520 uS/cm 274 MG/L	589 uS/cm 295 MG/L	589 uS/cm 295 MG/L	601 uS/cm 296 MG/L	601 uS/cm 296 MG/L	597 293 293
	11.9	11.9	11.9	11.9	5.9 MG/L	20.2 MG/L 30.2 MG/L	20.2 MG/L 30.2 MG/L			0.5 MG/L	0.5 MG/L	18.1
	6	1	1	1		25 FTU 23 FTU	25 FTU 23 FTU	2 FTU 5.3 NTU	2 FTU 5.3 NTU	1 FTU 2.9 NTU	1 FTU 2.9 NTU	
Deg. Celsi	17.8	17.8	17.8	17.8	18.1 Deg. Celsi	14.6 Deg. Celsi	14.6 Deg. Celsi			17.1 Deg. Celsi	17.1 Deg. Celsi	16



03/13/98	03/30/98	03/30/98	04/17/98	04/17/98	04/23/98	04/23/98	04/23/98
MG/L	0.02	MG/L	<	0.01	<	0.01	MG/L
Cubic Feet	2	Colonies/1	7	Colonies/1	13	Colonies/100ML	
MG/L	0.1	MG/L	0.18	Cubic Feet	0.03	Cubic Feet Per Second	
MG/L	0.04	MG/L	0.1	MG/L	<	0.1	MG/L
None	7.56	None	8.18	None		8	None
uS/cm	550	uS/cm	587	uS/cm	582	uS/cm	
MG/L	276	MG/L	280	MG/L	292	MG/L	
MG/L	<	MG/L					
FTU	2.8	NTU			3	FTU	
NTU					0.62	NTU	

**Complaint Information**

Incident # 8209

Caller Tim Jones Phone 707-9975 Date/Time 4/18/97 20:00

Entered By og

Lots of silty water in Barton Creek seems to be coming from "Pod 9". There is a big construction project going on in Water Quality zone of FM Properties and it is cause of the discharge.

Referred By Agency Phone

Spill? Complaint? Priority 1? E. Austin?
   Yes  No  Yes  No

**First Response Information**

Investigator Garza Date/Time 4/18/97 20:05 Ph. Resp. Only?  Yes Problem Verified?  Yes  No  Undefined Watercourse Affected?  Yes  No  Undefined

Street# Street Type Dir City Apt/Unit # City Grid
Austin C-20

Watershed Barton

Spill Type Qty Unit

Pollutants Captured Qty Unit

Illicit Connection Found? No. Illicit Connection Disconnected? No. Type

Responding Agencies: AFD TNRCC WWW Other1 Other2

Agencies Notified: TNRCC WWW ATCHD Other1 Other2

**Potential Responsible Party Information**

Company Contact Title Ph.

Street/PO City State Zip
Austin

City Facility?  Yes  No SDPP Permittable?  Yes  No

Clean-up By Comp ordered? 100 % Compliance? Legal Action Taken?
 Yes  No  Yes  No  Yes

## Response Summary

I received call from complainant saying there was a large release of silty water from a construction area in a designated water quality zone owned by FM Properties. I was not able to respond to call because City has no jurisdiction in this zone. I referred complaint to TNRCC. I called TNRCC emergency number and Region 11 emergency pager. I spoke to J. C. Craditt of Region 11 and Mr. Winnsboro of Central Office and told them of the complaint regarding a large discharge of sediment into Barton Creek. Both said that there was nothing they could do ~~know~~ since release of sediment was already ongoing. They said they would go on Monday. I gave them complainant phone number to call back. I called complainant on 4/19/97 and said that TNRCC had been referred complaint.



Investigation:  Complete  Incomplete  
Report:  Complete  Incomplete

4/21/97 09:30

Follow-up Date

Enter

5/8/97 09:32

Print

**Complaint Information**

Incident # 9186

Caller Georgia Callahan Phone 263-5512 Date/Time 1/27/98 09:09

Entered By cl

Freeport McMoran building homes on property directly across the street from Crystal Creek Dr. Large piles of dirt, brush and debris have been place within 10 feet from Barton Creek.

Referred By Agency Phone

Spill? Complaint? Priority 1? E. Austin?
   Yes  No  Yes  No

**First Response Information**

Investigator Garza Date/Time 1/27/98 15:20 Ph. Resp. Only?  Yes Problem Verified?  Yes  No  Undefined Watercourse Affected?  Yes  No  Undefined

Street# Street Type Dir City Apt/Unit # City Grid
Austin C-25

Watershed Barton

Spill Type Qty Unit

Pollutants Captured Qty Unit

Illicit Connection Found? No. Illicit Connection Disconnected? No. Type

Responding Agencies: AFD TNRCC WWW Other1 Other2

Agencies Notified: TNRCC WWW ATCHD Other1 Other2

**Potential Responsible Party Information**

Company Contact Title Ph.

Street/PO City State Zip
Austin

City Facility?  Yes  No SDPP Permittable?  Yes  No

Clean-up By Comp ordered? 100 % Compliance? Legal Action Taken?
 Yes  No  Yes  No  Yes

**Response Summary**

Complaint was referred to TNRCC, Ben Milford at Region 11 for enforcement because area is in water quality zone that is out of the City's jurisdiction. I telephoned complainant and informed them of the referral. No further action taken.



Investigation:  Complete  Incomplete  
Report:  Complete  Incomplete

1/27/98 16:00  
3/19/98 14:17

Follow-up Date

Enter

Print



Messrs. Helfert and Pearson and Ms. Saginaw  
May 13, 1997  
Page 2

The purpose of this letter is to set the record straight with the facts. First of all, muddy water was inadvertently discharged from the site by a contractor working on a water quality pond and utility installation. On April 18, 1997, during a routine inspection, FMPO staff noticed this situation and immediately stopped construction. A meeting was held Monday morning, April 21, 1997, with the FMPO staff, the contractor and the project's engineers to revise the construction procedures and to install additional erosion and sedimentation controls to prevent future non-continuous discharges. This meeting had concluded when FMPO staff received a telephone call from the TNRCC about a complaint that had been filed concerning this matter. TNRCC staff inspected the site that afternoon and have made frequent site visits since then.

Consultants for FMPO also responded by reviewing United States Geological Survey (USGS) measured data for Barton Creek at Lost Creek Boulevard on April 18, 1997, which indicated a flow in the creek of 92 cubic feet per second (cfs). USGS samples collected for Total Suspended Solids from 12/11/89 to 3/5/96 show a range of approximately 2 mg/l to 525 mg/l for flows ranging from 65 cfs to 135 cfs. Analysis of flow and water quality data collected by the USGS at two stream gauging stations, Barton Creek at State Highway 71 near Oak Hill, Texas and Barton Creek at Lost Creek Boulevard near Austin, Texas, indicates that the base flow in Barton Creek at the time of the event near POD 9 was sufficient to transport the non-continuous (pulse) discharge of total suspended solids at the concentration measured in POD 9. It is unclear whether the City of Austin downstream measurement of concentration (88 mg/l) was sufficiently far from the point of origin to determine the ultimate concentration after the pulse had completely mixed with the ambient waters in the creek. If it was not, then the concentration of total suspended solids within the creek after complete mixing would be even lower than the concentration measured 150 feet below POD 9 and, hence, well within the transport capacity of Barton Creek.

The Water Quality Protection Zone for the Barton Creek Development is a non-degradation plan for water quality through (1) maintaining background levels of water quality and (2) capturing and retaining the first 1.5 inches of rainfall from development areas. The approved plan also incorporates provisions for controlling the impact of construction activities, as follows: "The Plan is designed to minimize the extent of disturbance during development and the associated water quality control measures, including the placement and number of Best Management Practices facilities. As a standard practice of development, temporary erosion/sedimentation control structures such as silt fence and rock berms are utilized during construction. Areas disturbed by construction will be revegetated as soon after disturbance as feasible."

Silt fence, rock berms and stabilized construction entrances are typical control measures that are utilized during construction to minimize erosion potential due to construction activities. These controls are constructed and maintained in conformance with the standards provided in the City of Austin's Environmental Criteria Manual (1994), the strictest standards of practices in central

Messrs. Helfert and Pearson and Ms. Saginaw  
May 13, 1997  
Page 3

Texas. Silt fence is typically installed along the downstream perimeter of disturbed areas where shallow sheet runoff drains to natural drainageways and/or undisturbed areas outside the limits of construction. Rock berms are similarly utilized where concentrated runoff occurs from disturbed areas. Stabilized construction entrances are utilized at all points of ingress or egress on a public or private street.

In Section E, Phase 1, silt fencing is included in the construction plans and has been constructed adjacent to disturbed areas where sheet runoff is expected to occur (i.e., street and access drive to the lift station and water quality pond). Rock berms are also included in the plans and have been constructed immediately downstream from storm drainage outfalls, including a double rock berm in the draw downstream from the proposed water quality pond. A stabilized construction entrance was constructed at the entrance to the construction site adjacent to Barton Creek Boulevard.

Effective immediately, FMPO has also implemented the following changes to construction practices at the Barton Creek project: (1) installation of additional silt fencing and rock berms in draws, (2) modification of construction dewatering practices to eliminate the possibility of exceeding the optimum capacity of erosion controls, and (3) requiring dewatering to be pumped into a silt fence ring above the controls located in the draws.

In addition to the Water Quality Protection Zone, FMPO also has prepared a National Pollutant Discharge Elimination System, Stormwater Pollution Prevention Plan for compliance with EPA Notice of Intent (NOI) for Storm Water Discharge Associated with Industrial Activity under NPDES General Permit. This plan also outlines pollution prevention controls, sequence of construction, erosion and sedimentation controls, stormwater management controls, and other controls and timing of controls and measures. Inspection and maintenance procedures and pollution prevention measures are an integral part of this plan as well.

FMPO's Barton Creek project is the only one along that portion of Barton Creek which even has a water quality control program. In contrast to the SOS Coalition's allegations that there have been violations of permits or applicable law, in reality this is an example of how things are supposed to work. Instead of criticism, our company should be commended for quickly noticing a contractor's mistake and promptly responding to it. FMPO had shut down the contractor and had taken remedial actions well before a complaint was filed.

FMPO believes that adequate safeguards are in place to ensure that development of its project will not degrade water quality; however, we all learn from experience. As noted above, the company has initiated additional steps to minimize the chances that a similar situation will occur again. FMPO has also amended its contracts for future construction projects and has warned the contractor involved in this particular situation that we have adopted a "zero tolerance" standard.

Messrs. Helfert and Pearson and Ms. Saginaw  
May 13, 1997  
Page 4

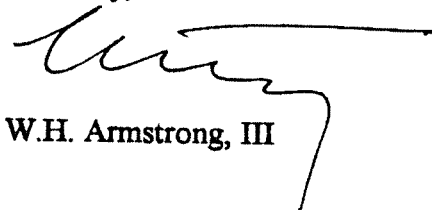
Enclosed for your files are copies of the amended contract provisions and the letter to the contractor.

We appreciate the role of your agencies in reviewing complaints and enforcing permits. We know that you always seek to find out the truth of what happened in any incident before you take any action, and we appreciate the opportunity to provide you with the information.

In spite of the fact that the complaint is totally unjustified, FMPO has not taken it lightly. The company is not only responsible to the public for its actions, but also to its shareholders. Any allegation of potential "civil or criminal liability," no matter how meritless, is taken very seriously. We trust that after a full investigation of the facts you will conclude, just as we have, that the complaint is without merit.

Please do not hesitate to call us if you have any questions.

Sincerely,



W.H. Armstrong, III

kjw

Enclosures

cc: David Armbrust  
Ken Jones  
John Barker  
Barry McBee  
Andy Barrett  
Bill Dukes

Barry R. McBee, *Chairman*  
R. B. "Ralph" Marquez, *Commissioner*  
John M. Baker, *Commissioner*  
Dan Pearson, *Executive Director*



## TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

*Protecting Texas by Reducing and Preventing Pollution*

June 18, 1997

Mr. Tim Jones  
2701 Nottingham Lane  
Austin, TX 78704

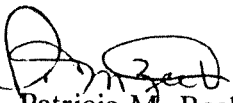
Re: Investigation Report Complaint No. 119700417

Dear Mr. Jones:

The Austin regional office has completed a final investigation in response to your concern regarding illegal discharges at "Pod 9" in Section E, Phase 1 of the Barton Creek Properties development. The project site is located approximately two miles south of RM 2244 on Barton Creek Boulevard in Travis County. Enclosed is a copy of the final investigation report indicating the results of the investigation.

Thank you for contacting the Texas Natural Resource Conservation Commission with your concerns. If you have any questions regarding this investigation please feel free to contact Melissa Lopez at (512) 339-2929.

Sincerely,

  
Patricia M. Reeh  
Water Program Manager

PMR/mml

Enclosure

ALLEGED SOURCE: FM Properties/Barton Creek Properties  
LOCATION: Within the tributary in the proposed Section E. Also identified as "Pod 9".  
CITY, COUNTY: Austin, Travis County - 227  
INVESTIGATION DATE: 4/21/97, 4/30/97, 5/1/97, 5/2/97, 5/9/97, 5/12/97, 5/14/97, 5/20/97,  
5/30/97, 6/06/97  
VIOLATION FOUND: Texas Water Code 26.121  
COMPLAINT NUMBER: 119700344  
INVESTIGATOR(S): Melissa M. Lopez

---

**INITIAL PROBLEM:** Silt generated by construction activities is being discharged from into Barton Creek downstream of Pod 9.

**SUMMARY OF INVESTIGATION:**

Friday, April 18, 1997

Oscar Garza, inspector with the City of Austin (COA) Drainage Utilities Division (DUD), reported a sediment discharge from detention pond 9. Both J.C. Cradit, regional inspector on spill duty, and David Barker, of the Emergency Spill Response Team were contacted by Mr. Garza. Mr. Garza stated that he was reporting the release in response to a complaint he had received. Mr. Garza was unable to identify the location of the pond and stated that the release had occurred within the last two hours. He also stated that the discharges had ceased. Mr. Cradit and Mr. Barker concurred that sediment releases could not be appropriately addressed by emergency spill response, particularly since the location of the pond could not be provided and the incident was no longer occurring. Barton Creek Properties/Freeport McMoran did not report the incident.

Monday, April 21, 1997

Chuck Lesniak, an inspector with the City of Austin's Drainage Utilities Division, contacted the regional office to inquire about the status of the complaint. He believed the original complainant who contacted the city had filed a formal complaint with the regional office on Friday, April 18, 1997. Melissa Lopez, regional inspector, informed Mr. Lesniak that the regional office had not received this complaint, but that she would follow-up on the inquiry. Shortly after this conversation, the original complainant contacted James Bice, regional inspector, and lodged a formal complaint against Barton Creek Properties for discharging sediment at "Pod 9". "Pod 9" is a designation which the complainant had previously assigned to a segment of a tributary to Barton Creek during a personal study of the area.

Melissa Lopez contacted Lisa Foster, Water Quality Manager for Freeport McMoran's (FM) Barton Creek Properties, and scheduled a site inspection. Regional inspectors Melissa Lopez and Christine Ellington met with Lisa Foster and Keith Thornsberry, Project Engineer with Rust/Lichliter Jameson, at the site at 2:00 p.m. and conducted a site inspection.

Complaint #119700417  
June 17, 1997

Ms. Foster cited several circumstances which led to the discharge. The site had received 2.7 inches of rain over a three day period, which not only provided surface sheet flow, but also produced enough water to recharge shallow perched aquifers. (Refer to attached rainfall measurements provided by FM). The area excavated for the water quality pond quickly filled with water from both sources. The splitter box and culvert run are the only areas of the basin which were excavated, the retention/irrigation basin had not been excavated. The proposed water quality pond will span the entire width of the drainage area which flows to the head of the tributary. The outfall of the culvert box is 20 feet up gradient of the tributary.

The problem was compounded by the activities of Keystone Contractors. Keystone had been trenching utility lines up gradient of the site. The utility trenches also filled with groundwater and the contractor had been pumping out and discharging silt laden water to the natural tributary which flows to this portion of the development.

In an attempt to control and divert the water collecting in the basin pit, Ms. Foster and Mr. Thornsberry decided to excavate a side channel on the west side of the pond. The plan was to divert the flow and pump the collected water to another area. However, the pump did not function properly and the additional excavation activities exacerbated the siltation problem.

The following conditions were observed:

- An area of approximately 20 acres drains to this portion of the tributary. The entire site has been graded and consists of loose and unstabilized soils.
- In approaching the site, the inspectors noted that the temporary erosion and sedimentation controls at other portions of the development appeared to be properly placed, installed, and maintained.
- The rock berm and silt fencing installed across the tributary were not capable of handling the amount of flow generated by the rain events and groundwater discharges.
- The silt fence immediately up gradient of the rock berm had collapsed and the flow had bypassed the sides and top of the rock berm.
- The up gradient and down gradient waters were extremely turbid. Silt deposits ranging from ½ inch to at least one foot thick were observed up to 600 feet down gradient of the rock berm. The dense vegetation and embankments of silt restricted access and the inspection of the tributary was limited. The amount of silt and degree of turbidity was constant throughout this 600 foot segment.

Complaint #119700417  
June 17, 1997

- Groundwater was discharging steadily from the west side of the culvert excavation, creating a constant source of flow toward the tributary.

As a remediation strategy, Mr. Thornsberry proposed to lengthen the rock berm at least five feet on both ends to thoroughly encompass the width of the tributary. In addition, the height of the berm would also be raised by at least 5 feet. Another row of silt fencing was proposed for the down gradient side of the berm and an additional rock berm would also be installed at the outfall of the culvert excavation.

Trucks loaded with aggregate for upgrading the berm were at the site as the inspectors concluded the investigation. Both Ms. Foster and Mr. Thornsberry agreed to keep the inspectors apprised of any problems and to notify them when the repairs had been completed.

Wednesday, April 23, 1997

Melissa Lopez had not heard from either Ms. Foster or Mr. Thornsberry and she attempted to contact them for a status report of the repairs. Ms. Foster reported that they were having problems with the repairs because of the amount of flow discharging from the perched aquifer.

Thursday, April 24, 1997

Ms. Lopez contacted Lisa Foster for an update of site activities. Ms. Foster stated that they had decided to install three additional down gradient silt fences and were attempting to build another rock berm. Nine additional truck loads of aggregate were needed to complete the upgrade to the primary berm. They were trying to complete the repairs that evening since rainfall was forecast for Friday and throughout the weekend.

Friday, April 25, 1997

Very heavy rainfall occurred throughout the area. Melissa Lopez left a voice mail message for Ms. Foster to contact Carolyn Runyon, regional inspector, if site conditions changed.

Wednesday, April 30, 1997

Melissa Lopez and Christine Ellington inspected the site and found that all efforts to retain sediment had completely failed. While the rock berm was structurally intact, portions of the down gradient fencing were torn and had collapsed. The site had not recovered from the storm events which had occurred over the weekend. Up gradient and down gradient flow was high, strong, and extremely turbid. All silt fencing and the rock berm had been circumvented. With the exception of the smaller

Complaint #119700417

June 17, 1997

rock berm at the outfall, all of the proposed measures had been installed. It is the opinion of both inspectors that the smaller berm would not have provided any appreciable effect if it had been installed. Another collection pit was excavated northeast of the culvert outfall and south of the rock berm in an attempt to pump and collect water. This proved unsuccessful because the hydraulic gradient drained the water from the collection pit back into the basin excavation. During the inspection, workers were installing rebar within the culvert box excavation. At Ms. Lopez's direction, all construction in the immediate area was halted until the sedimentation was attenuated. Mr. Thornsberry stated that the additional silt fencing would be installed immediately in the morning. He stated that they were having recurrent problems with Keystone Contractors. He also stated that Keystone was continuing to empty silt laden water taken from the utility trenches into the tributary, despite daily reprimands from Ms. Foster. Ms. Foster reported that these activities are occurring up gradient of the water quality pond. Regional staff has not observed these activities during the inspections.

Thursday, May 1, 1997

Ms. Lopez contacted Ms. Foster about the status of the site. Ms. Foster reported that additional silt fencing would be installed up gradient of the rock berm and confirmed that all construction had ceased. Additionally, a silt fence ring had been installed at the top of the hill to filter water which would be pumped from a pit dug at the culvert box outfall.

Christine Ellington and Melissa Lopez returned to the site at 4:00 p.m. and found that conditions had improved substantially. Mr. Thornsberry stated that they had begun to install the fencing at noon. Substantial settling had occurred and almost all of the flowing water was clear. A small rock berm had been installed at the basin outfall, an additional length of silt fencing had been installed approximately 10 feet up gradient of the primary rock berm, and an up gradient area had been graded to facilitate pooling and settling. The surface flow was constant and moderate, which prevented repairing the tears in the second down gradient silt fence. Significant groundwater flow was still occurring from the west and east walls of the sedimentation basin excavation. It did not appear to have diminished significantly since April 21, 1997. Mr. Thornsberry indicated that David Norris, Freeport McMoran's environmental expert, will be at the site on Tuesday, May 6, 1997.

Friday, May 2, 1997

Christine Ellington and Melissa Lopez visited the site and found that conditions had improved. All down gradient flow is clear. The down gradient pool remains turbid and does not appear to have settled. Mr. Thornsberry stated that if conditions are favorable, they will attempt to pump enough water out of the basin excavation to allow them to pour the remainder of the concrete slab. However, this will increase the turbidity for at least 48 hours. They plan to lay rebar over the ground prior to pouring to try and minimize disturbing the silt. If rain does occur or is forecast, they will wait until

Complaint #119700417  
June 17, 1997

Monday, May 12, 1997, before considering any action. Two pumps will be installed to transport the water to the silt fence ringed filter area, the discharged water will flow downhill and be intercepted by another segment of silt fencing before encountering the tributary. Ms. Foster stated that the process will be under surveillance at all times. She stated that she would contact TNRCC prior to pumping so that we could observe, if we wished. Ms. Foster and Mr. Thornsberry agreed to keep TNRCC apprised of all activities.

May 7, 1997

Ms. Lopez contacted Ms. Foster and informed her that pumping and discharging water from the basin would constitute an unpermitted point source discharge. Ms. Lopez directed her to desist from initiating any such discharges. Ms. Foster asked for guidance on resuming construction of the water quality basin. Ms. Lopez advised her to refrain from disturbing the area.

May 9, and 12, 1997

Site conditions were photographed. No construction has been conducted in the immediate area of the retention/irrigation basin, however, construction up gradient of the pond has continued since April 18, 1997.

May 14, 1997

Ms. Lopez and Ms. Foster walked down the tributary to approximately 50 feet from the convergence with Barton Creek. The depth of the water and the topography prevented the inspector from walking to the confluence with Barton Creek. The banks were approximately 60 feet high and could not be accessed. Sediment covered the creek bed along the entire length, ranging from one inch to one foot thick. The thickest layers were found within 600 feet down gradient of the rock berm. The confluence with Barton Creek is estimated to be approximately one-third of a mile long.

May 20, 1997

Ms. Lopez accompanied Mr. Chris Ruehl, an EPA Region 6 inspector, during his inspection of the site. The EPA also received a complaint and conducted an inspection to determine FM's compliance with their NPDES permit. Mr. Ruehl found minor administrative violations regarding updating the E & S inspection records and the site plan. Mr. Ruehl also stated that the temporary controls which were in place were inappropriate because they could not handle the amount of flow coming from the site. He concurred with regional staff that a temporary basin would have been suitable, given the size of the drainage area. Mr. Ruehl was concerned that future storm events would flush the large amounts of sediment immediately down gradient of the

Complaint #119700417

June 17, 1997

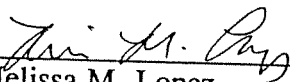
rock berm further down stream. He directed Ms. Foster to remove the sediment and repair the silt fencing.

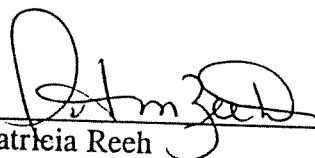
May 30, 1997

Several storm events occurred since May 20, 1997. The culvert box slab was almost completely poured, the side forms for the culvert box are in place and the up and down gradient flow is clear.

**RESULTS OF INVESTIGATION:** Since April 21, 1997, regional staff has observed repeated occurrences of excessive and uncontrolled sediment discharges resulting from development activities at this site into a tributary of Barton Creek. Sediment laden waters were pumped from utility trench excavations directly into the tributary on at least two occasions and inappropriate temporary erosion and sedimentation controls were installed.

**CLOSURE COMMENTS:** Referral for Enforcement Action was submitted on June 11, 1997. All photo documentation for the complaint was forwarded with the EAR. Follow-up inspections will continue to monitor site conditions.

  
\_\_\_\_\_  
Melissa M. Lopez  
INVESTIGATOR

  
\_\_\_\_\_  
Patricia Reeh  
AUSTIN REGION PROGRAM MANAGER



## MEMORANDUM

TO: Mayor and Councilmembers

FROM: Michael J. Heitz, AIA, Director  
Drainage Utility Department

DATE: April 30, 1997

SUBJECT: Investigation of Recent Barton Creek Sediment Discharge

On April 21, 1997, the Environmental Resources Management Division was notified by a citizen of a discharge of turbid water into Barton Creek from a tributary draining a portion of Barton Creek Properties. The attached report summarizes a brief investigation of the source and quality of this discharge. The water was high in suspended solids and deposited sediment in the channel downstream, indicating a discharge from construction activity. The property from which the discharge appeared to originate is not currently under jurisdiction of the City of Austin. The property is regulated by the State of Texas as a Water Quality Protection Zone (WQPZ) under 30 TAC 216 which was the result of State legislation passed during the 1996 session. We notified the Texas Natural Resources Conservation Commission, who is responsible for enforcement of WQPZ restrictions on a discharge of construction runoff during development. We have provided the attached report to the TNRCC. If you require any additional information on this matter please call Nancy McClintock at 499-2652 or me at 499-3433.

  
Michael J. Heitz, AIA, Director  
Drainage Utility Department

MJH/EDP

POD 9 Investigation

VISIT DATE	NAME	NAME	NH3 as N MG/L	DO MG/L	FECAL COL Colonies/100ML	NO3-N MG/L	ORTHO-P MG/L	PH	SPEC COND	TDS MG/L	TSS MG/L	TURB FTU	TURB NTU	TEMP Deg. Celsius
04/22/97	POD 9 Tributary	ECSD				< 0.1	0.01	None	None	285	95	325		
05/07/97	POD 9 Tributary	ECSD	0.01			< 0.1	0.03		565	261		6	12	
05/07/97	POD 9 Tributary	Field						8.04						19.6
05/09/97	POD 9 Tributary	ECSD										450		
06/05/97	POD 9 Tributary	ECSD	0.01			0.1	0.04		532			4	8.8	
06/19/97	POD 9 Tributary	ECSD	0.01		12	< 0.1	0.07					5	12	
06/19/97	POD 9 Tributary	Field							518	260				24.4
06/27/97	POD 9 Tributary	ECSD	0.02			< 0.1	0.03					4	4.9	
06/27/97	POD 9 Tributary	Field		7.6					504	250				22.8
07/02/97	POD 9 Tributary	ECSD	0.01			< 0.1	0.03					1	2.1	
07/02/97	POD 9 Tributary	Field							475	241				24
07/10/97	POD 9 Tributary	ECSD	0.01			< 0.1	0.03					2	2	
07/10/97	POD 9 Tributary	Field							525	262				23
07/17/97	POD 9 Tributary	ECSD	0.01			< 0.1	0.03					1	1.5	
07/17/97	POD 9 Tributary	Field		10.4					634	316				24

# POD 9 Investigation

