



SUSANA MARTINEZ  
Governor  
JOHN A. SANCHEZ  
Lieutenant Governor

## NEW MEXICO ENVIRONMENT DEPARTMENT

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BUTCH TONGATE  
Acting Cabinet Secretary

### **Certified Mail – Return Receipt Requested**

August 12, 2016

Mr. Robert (Bob) John, General Mine Manager  
Chevron Mining Inc., Questa Mine  
P. O. Box 469  
Questa, NM 87556

**Re: Chevron Mining, Inc. (CMI), Questa Mine; Major Individual Permit; SIC 1061; NPDES Reconnaissance Inspections; NM0022306; June 2 and July 13, 2016**

Dear Mr. John:

Enclosed please find a copy of the report for the referenced inspection that the New Mexico Environment Department (NMED) conducted at your facility on behalf of the U.S. Environmental Protection Agency (USEPA). This inspection report will be sent to the USEPA in Dallas for their review. These inspections are used by USEPA to determine compliance with the National Pollutant Discharge Elimination System (NPDES) permitting program in accordance with requirements of the federal Clean Water Act.

You are encouraged to review the inspection report, required to correct any problems noted during the inspection, and advised to modify your operational and/or administrative procedures, as appropriate. If you have comments on or concerns with the basis for the findings in the NMED inspection report, please contact us (see the address below) in writing within 30 days from the date of this letter. Further, you are encouraged to notify in writing both the USEPA and NMED regarding modifications and compliance schedules at the addresses below:

Racquel Douglas  
US Environmental Protection Agency, Region VI  
Enforcement Branch (6EN-WM)  
Fountain Place  
1445 Ross Avenue  
Dallas, Texas 75202-2733

Bruce Yurdin  
New Mexico Environment Department  
Surface Water Quality Bureau  
Point Source Regulation Section  
P.O. Box 5469  
Santa Fe, New Mexico 87502

If you have any questions about this inspection report, please contact Erin Trujillo at 505-827-0418 or at [erin.trujillo@state.nm.us](mailto:erin.trujillo@state.nm.us).

**Mr. John, Questa Mine, NM0022306**

**August 12, 2016**

**Page 2 of 2**

Sincerely,

*/s/Bruce J. Yurdin*

Bruce J. Yurdin  
Program Manager  
Point Source Regulation Section  
Surface Water Quality Bureau

cc: Carol Peters-Wagnon, USEPA (6EN-WM) by e-mail  
Racquel Douglas, USEPA (6EN-WM) by e-mail  
Gladys Gooden-Jackson, USEPA (6EN-WC) e-mail  
Brent Larsen and Tung Nguyen, USEPA (6WQ-PP) by e-mail  
Isaac Chen, USEPA (6WQ-PP) by e-mail  
Gary Baumgarten, USEPA (6SF-RA) by e-mail  
Robert Italiano, NMED District II by e-mail  
Anne Mauer, Chevron-Questa Mine Permit Lead, NMED GWQB by e-mail  
Joseph C. Fox, NMED GWQB by e-mail  
Jeff Schoenbacker, Chevron EMC by e-mail  
Armando Martinez, Chevron EMC by e-mail  
Tony Loston, USEPA (6EN-WM) by e-mail



**NPDES Compliance Inspection Report**

**Section A: National Data System Coding**

Transaction Code	NPDES	yr/mo/day	Inspec. Type	Inspector	Fac Type
1   N   2   5   3   N   M   0   0   2   2   3   0   6   11   12   1   6   0   6   0   2   17   18   R   19   S   20   2					
Remarks					
I   N   A   C   T   I   V   E   M   O   L   Y   B   D   E   N   U   M   M   I   N   E   -   M   I   L   L					
Inspection Work Days	Facility Evaluation Rating	BI	QA	-----Reserved-----	
67       69	70   2	71   N	72   N	73	74   75                   80

**Section B: Facility Data**

Name and Location of Facility Inspected (For industrial users discharging to POTW, also include POTW name and NPDES permit number) Chevron Mining Inc. (CMI), Questa Mine, with mine 3.5 miles east of Questa, NM, north side of NM 38; and tailings facility west of NM 522 in Questa, NM. Taos County.	Entry Time /Date ~0955 hours / 06/02/2016 ~0955 hours / 07/13/2016	Permit Effective Date November 1, 2013
	Exit Time/Date ~1415 hours / 06/02/2016 ~1255 hours / 07/13/2016	Permit Expiration Date October 31, 2018
Name(s) of On-Site Representative(s)/Title(s)/Phone and Fax Number(s) -Armando Martinez , Env. Manager, Chevron Env. Management Company (EMC) / 575-586-7639 -Jeff Schoenbacker, Project Manager, Chevron EMC /575-586-7537 -Alex Arellano, Env. Tech, Chevron EMC	Other Facility Data <u>Administrative Mine Office Entrance</u> 36.689328°, -105.540013°  SIC 1061	
Name, Address of Responsible Official/Title/Phone and Fax Number -Mr. Bob John, General Mine Manager, Chevron Mining Inc., Questa Mine, P. O. Box 469, Questa, NM 87556 / 575-586-7521, Fax 575-586-0811	Contacted Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

**Section C: Areas Evaluated During Inspection**

(S = Satisfactory, M = Marginal, U = Unsatisfactory, N = Not Evaluated)

M	Permit	N	Flow Measurement	M	Operations & Maintenance	N	CSO/SSO
M	Records/Reports	N	Self-Monitoring Program	N	Sludge Handling/Disposal	N	Pollution Prevention
N	Facility Site Review	N	Compliance Schedules	N	Pretreatment	N	Multimedia
N	Effluent/Receiving Waters	N	Laboratory	N	Storm Water	N	Other:

**Section D: Summary of Findings/Comments (Attach additional sheets if necessary)**

- See attached Reconnaissance Inspection report and further explanations.

Name(s) and Signature(s) of Inspector(s) <b>Erin S. Trujillo /s/Erin S. Trujillo</b>	Agency/Office/Telephone/Fax <b>NMED/SWQB/505-827-0418</b>	Date <b>08/12/2016</b>
Signature of Management QA Reviewer <b>Sarah Holcomb /s/Sarah Holcomb</b>	Agency/Office/Phone and Fax Numbers <b>NMED/SWQB/505-827-2798</b>	Date <b>08/12/2016</b>

**Chevron Mining Inc. - Questa Mine  
NPDES Permit No. NM0022306  
Reconnaissance Inspections  
June 2, 2016 and July 13, 2016**

**Further Explanations**

**Introduction**

On June 2, 2016 and July 13, 2016, announced Reconnaissance Inspections (RIs) were conducted by Erin S. Trujillo, accompanied by Daniel Valenta, both of the State of New Mexico Environment Department (NMED), Surface Water Quality Bureau (SWQB) at the Chevron Mining Inc. (CMI), Questa Mine (formerly Molycorp) near the Village of Questa, Taos County, New Mexico. The RIs were conducted prior to and after a planned shut down of Best Management Practices (BMPs) required to be operated and maintained by the facility's National Pollutant Discharge Elimination System (NPDES) permit. The shut down of the seepage interception systems and ground water withdrawal well system was related to water collection system demolition, construction and electrical work at the facility. Questa Mine is classified as a major facility discharger under the federal Clean Water Act, Section 402 NPDES permit program and is assigned permit number NM0022306.

NMED performs a certain number of inspections, for example, Compliance Evaluation Inspections (CEIs) and RIs, for the U.S. Environmental Protection Agency (USEPA) each year. The purpose of this inspection is to provide USEPA with information to evaluate the permittee's compliance with the BMP conditions of the NPDES permit. This report is based on review of files maintained by the permittee and NMED, on-site observation by NMED personnel, and verbal and follow up e-mail information provided by the permittee's representatives. A review of Red River flow data was obtained from on-line United States Geological Service (USGS) database at <http://waterdata.usgs.gov/nwis>.

**Background**

USEPA Region 6, Record of Decision (ROD), Molycorp, Inc., Questa, New Mexico, CERCLIS ID No: NMD002899094, dated December 20, 2010 is the decision document that presents the "Selected Remedy" for the Site chosen in accordance with Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and National Oil and Hazardous Substances Pollution Contingency Plan (NCP). The facility or site was placed on USEPA National Priorities List (NPL) of Superfund Sites. USEPA decided to continue or proceed with NPDES permitting for some discharges under the Selected Remedy. Other permits for the Questa Mine activities include NMED Goundwater Quality Bureau (GWQB) ground water discharge permits DP-1055 and DP-933 and the New Mexico Energy, Minerals, and Natural Resources Department (EMNRD) Mining and Minerals Division (MMD) permit TA001RE.

CMI Questa Mine includes underground molybdenum mine, mill area, tailing disposal impoundments (tailing facility), historic open pit and massive waste rock piles. Rock piles, approximately 750 acres, at the mine site include Capulin, Goathill North, Goathill South, Sugar Shack West, Sugar Shack South, Middle, Sulphur Gulch South, Spring Gulch and Sulphur Gulch North / Blind Gulch. CMI announced the cessation of mining operations at the Questa Mine on June 2, 2014. No tailings are sent to the Tailing Facility for disposal. For collected waters, a new Water Treatment Plant is under construction at the Mill Area. Closeout activities continue with phased decommissioning and demolition of selected surface facilities at the Mill Area, Mine Area, and Tailing Facility. Mine reclamation activities have not been completed.

The facility is located in the watershed of the Red River which includes several tributaries, including Sulfur Gulch, Spring Gulch, Goathill Gulch and Capulin Canyon. Discharges from four outfalls (Outfalls 002, 004, and 005 and "new" Outfall 001) are authorized by the USEPA NPDES Permit No. NM0022306 to Red River in *State of New Mexico Standards for Interstate and Intrastate Surface Waters* Segment 20.6.4.122 New Mexico Administrative Code (NMAC) of the Rio Grande Basin. Designated uses for this segment of Red River are coldwater aquatic life, fish culture, irrigation, livestock watering, wildlife habitat and primary contact. Operation and proper maintenance of Spring 13 and Spring 39 seepage interception systems and

ground water withdrawal downgradient of the Sugar Shack waste rock pile are Best Management Practices (BMPs) required under USEPA NPDES Permit No. NM022306 to comply with the prohibition against the discharge to the Red River of pollutants traceable to point source mine operations.

Questa Mine's NPDES Permit is available at <https://www.env.nm.gov/swqb/NPDES/Permits/NM0022306-Chevron-Questa.pdf>. A summary of the site background, activities, CERCLA selected remedy and relationship to NPDES authorized discharges, authorized outfalls and summary of the seepage interception systems and ground water withdrawal was provided in the September 2014 and September 2014 NPDES CEI reports available at:

<https://www.env.nm.gov/swqb/NPDES/Inspections/NM0022306-20140923.pdf>; and  
<https://www.env.nm.gov/swqb/NPDES/Inspections/NM0022306-20150928.pdf>

### **Reconnaissance Inspection Details**

A permittee representative notified USEPA by e-mail on May 26, 2016, with copy to NMED SWQB, of a planned temporary shut down on June 4 thru June 24, 2016 of the seepage interception and groundwater withdrawal well systems due to demolition, construction, as well as, the installation of the new electrical infrastructure of the facility's water collection system.

Upon arrival at the facility on June 2, 2016 at approximately 0955 hours, the inspectors made introductions, presented credentials, and discussed the purpose of the RIs with Mr. Armando Martinez, Environmental Manager and Mr. Jeff Schoenbacker, Project Manager, both of Chevron Environmental Management Company (Chevron EMC). Ms. Trujillo, Mr. Valenta and Mr. Schoenbacker toured portions of Red River and the BMP systems. An objective of the June 2<sup>nd</sup> RI was to obtain additional information about the activities requiring a shut down and visual information of the receiving water, seeps and springs, and site conditions before the shutdown. Ms. Trujillo conducted a brief exit interview on site at CMI's offices to discuss preliminary findings, including potential problems that could occur during the shut down, with Mr. Martinez and Mr. Schoenbacker. Permittee representatives decided during the June 2<sup>nd</sup> RI to issue a work order to isolate valves for the water collection system to prevent any back-flow spillage and to continue inspections of these engineering controls during the outage. The inspectors left the facility at approximately 1415 hours on June 2<sup>nd</sup>.

A permittee representative notified USEPA by e-mail on June 22, 2016, with copy to NMED SWQB, of a delay related to the demolition of a pump station associated with a component of the water collection system. A corroded and non-functional valve was to be replaced and tying into the dewatering pipeline system was anticipated to delay the power coming back online until July 1, 2016. A permittee representative notified USEPA by e-mail on July 1, 2016, with a copy to NMED SWQB, of the returned operation of BMPs on June 30, 2016.

Since much of the equipment and piping systems are underground or in vaults, a review of the Permittee's recordkeeping associated with the maintenance and operation of the BMP systems was requested as part of the July 13<sup>th</sup> RI. Upon arrival at the facility on July 13, 2016 at approximately 0955 hours, the inspectors made introductions, presented credentials, and discussed the purpose of the follow up RI with Mr. Schoenbacker and Mr. Alex Arellano, Environmental Tech, also of Chevron EMC. An objective of the July 13<sup>th</sup> RI was to obtain visual information of the receiving water and site conditions after operations had resumed. A visual inspection of portions of the Spring 13 and Spring 39 interception system and Red River was conducted by the inspectors with Mr. Schoenbacher and Mr. Arellano.

Ms. Trujillo conducted a brief exit interview on site with Mr. Martinez and Mr. Schoenbacker. The inspectors left the facility at approximately 1255 hours on July 13<sup>th</sup>. Additional information on the water metrics for the facility's Water Collection Systems was provided by Mr. Schoenbacker and Mr. Dave Blame, Water Collection System Operator, SBI by telephone on July 22, 2016.

## Site Conditions and Record Review Notes

Dry red (rusty in color) deposits, aluminum hydroxide and foam were observed along the Red River banks east and upstream of the Questa Mine boundary during the 2015 NPDES CEI. Foam at the stream banks was observed upstream of the mine boundary during the June 2<sup>nd</sup> and July 13<sup>th</sup> NPDES RI. Visible white aluminum hydroxide precipitates, red (rusty in color) slimy deposits, possibly iron bacteria and algal growth mats continue to be observed along the north bank of the Red River at and downstream of Spring 13 and Spring 39, and associated interception systems. Algal growth may be from increased nutrients (nitrogen and phosphorus). At Spring 39, the upper portion was dry and the lower portion was flowing with floating aluminum hydroxide precipitates on June 2<sup>nd</sup>. Although precipitates below the water surface were visible, the high river flow from snow melt runoff limited visual observation at Spring 13 on June 2<sup>nd</sup>. Flow, aluminum hydroxide precipitates and algal growth at Spring 13 were visible and the precipitates had not dried on July 13<sup>th</sup>. Compared to June 2<sup>nd</sup>, there appeared to be increased flow at Spring 39 on July 13<sup>th</sup>; however, similar amounts of aluminum hydroxide deposits were observed in 2014 and 2015, as shown in photos in the 2014 and 2015 NPDES CEI Reports.

Reviewed e-mail notifications on shut downs for annual maintenance, power outages, and repair shut downs were consistent with reviewed daily inspection logs since the last 2015 NPDES CEI. Based on a review of daily logs, inspections continued on days of shut downs. During the June 2016 shut down, dewatering and removed substances from the Spring 13 and 39 pump vaults were transported to the Sump 5000 according to a permittee representative. Unauthorized wastewater (underground mine dewatering and water collection systems) continue to be disposed at the Tailing Facility the NPDES Permit's Schedule of Compliance. No overflows or spills occurred during the shutdown according to a permittee representative. After the June 2016 shut down, recorded instantaneous production or pumping for the seepage interception and groundwater water withdrawal well system appeared to resume to rates similar to those prior to the shut down.

## Permit Requirements

Part II.D requirements in the 2013 NPDES Permit are provided in Attachment A.

Part III.B.2 (Standard Conditions, Duty to Mitigate) of the NPDES Permit states *"The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment."*

Part III.B.3 (Standard Conditions, Proper Operation and Maintenance) of the NPDES Permit states *"a. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by permittee as efficiently as possible and in a manner which will minimize upsets and discharges of excessive pollutants and will achieve compliance with the conditions of this permit...This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of this permit. b. The permittee shall provide an adequate operating staff which is duly qualified to carry out operation, maintenance and testing functions required to insure compliance with the conditions of this permit."*

Part III.B.4 (Standard Conditions, Bypass of Treatment Facilities) of the NPDES Permit states:

*a. BYPASS NOT EXCEEDING LIMITATIONS The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Parts III.B.4.b. and 4.c.*

*b. NOTICE (1) ANTICIPATED BYPASS If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass. (2) UNANTICIPATED BYPASS The permittee shall, within 24 hours, submit notice of an unanticipated bypass as required in Part III.D.7.*

*c. PROHIBITION OF BYPASS (1) Bypass is prohibited, and the Director may take enforcement action against a permittee for bypass, unless: (a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; (b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and, (c) The permittee submitted notices as required by Part III.B.4.b. (2) The Director may allow an anticipated bypass after considering its adverse effects, if the Director determines that it will meet the three conditions listed at Part III.B.4.c(1).*

Part III.D.2 (Standard Conditions, Anticipated Noncompliance) of the NPDES Permit states *“The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.”*

Part III.D.7 (Twenty-Four Hour Reporting) of the NPDES Permit states:

*a. The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall be provided within 5 days of the time the permittee becomes aware of the circumstances. The report shall contain the following information: (1) A description of the noncompliance and its cause; (2) The period of noncompliance including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and, (3) Steps being taken to reduce, eliminate, and prevent recurrence of the noncomplying discharge.*

*b. The following shall be included as information which must be reported within 24 hours: (1) Any unanticipated bypass which exceeds any effluent limitation in the permit; (2) Any upset which exceeds any effluent limitation in the permit; and, (3) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in Part II (industrial permits only) of the permit to be reported within 24 hours.*

*c. The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.*

Part III.D.11 (Signatory Requirements) of the NPDES Permit states *“All applications, reports, or information submitted to the Director shall be signed and certified.”*

#### **Permit – Marginal (Not Satisfactorily Addresses Observations)**

- Part II.D of the NPDES Permit states *“The permittee shall also properly operate the ground water withdrawal well below the toe of the Sugar Shack South deposit at a location approximately 100 yards southwest of the old mill site.”* The ground water withdrawal well system has three wells below the Sugar Shack deposit southwest of the old mill site. USEPA Region 6 approved additional ground water wells under NPDES Permit No. NM0022306 in a letter to the Permittee dated April 18, 2002 (Attachment B of this NPDES RI Report). The Permittee may contact the USEPA Region 6 Permit Writer to confirm that the ground water well system, not just one well, was intended in the 2013 Permit.
- Part II.D of the NPDES Permit states *“This permit prohibits the discharge to the Red River of pollutants traceable to point source mine operations except in trace amounts. Implementation of these Best Management Practices...is considered compliance with this prohibition.”* As commented by this inspector in the 2015 NPDES CEI report, USEPA R6 may want to consider if the implementation of the BMPs as described in the permit should continue to be considered as compliance with the point source mine operation prohibition, or if more is needed. Pumping rates at the Spring 13 and Spring 39 interception system have decreased since installation. It has been ten years since the effectiveness of the

BMPs was evaluated by URS for CMI. Visible white aluminum hydroxide precipitates continue to be observed at Spring 13 and Spring 39, and associated interception systems. Additional information on the BMP systems and photos is summarized in Attachment C of this NPDES RI Report.

### **Reports & Record Keeping – Marginal**

- Data entry for monthly spring inspection recordkeeping appeared to need periodic review to ensure correctness and consistency. Data from the monthly spring inspections is summarized in CMI's Annual Report to USEPA (see Part II.D of the NPDES Permit).

Additional Notes and Comments: During a review of monthly spring inspection recordkeeping from and after November 2015, some inconsistencies were observed. A couple of spring inspection records were missing—data not entered. A few springs were marked “inactive” when flow rates were recorded. Flow rates recorded as zero “0” during high stream flows when the spring was marked “cannot access site” did not appear accurate. Examples of observed inconsistencies were provided to permittee representative following the July 13<sup>th</sup> NPDES RI. According to permittee representative, observed data entry issues were corrected. A review of past recordkeeping, annual report flow data calculations and comparisons may also be needed. Changes in inspection logs procedures could alter estimated spring flow calculations. Substantial differences in reported spring flows due to recordkeeping changes, if any, should be discussed in the next Annual Report.

- Reviewed e-mail notifications for unanticipated non-compliance did not include steps being taken to reduce, eliminate, and prevent recurrence (see Part III.D.7.b). Applicability of USEPA waiving each written report (see Part III.D.7.c) is not documented in reviewed e-mail notifications.

Additional Comment: The Permittee may contact the USEPA Region 6 Permit Writer to confirm if bypass allowances listed in Part III.B are applicable to the BMP systems. Although not treatment systems, if applicable, reviewed e-mail notifications may not be sufficient to document the specific conditions and allowances listed at Part III.B.4. If applicable, additional documentation or recordkeeping may be needed.

### **Operations & Maintenance – Marginal**

- After the 2015 annual scheduled maintenance, one or more of the seepage interception and ground water withdrawal components were not operated, as follows:
  - 10/30 to 11/04/2015, Spring 13 system pump failed, pump purchased, replacement installed;
  - 02/29 to 03/01/2016, scheduled power outage, electrical testing;
  - 04/25 to 05/03/2016, pump down and/or outage, including GWW-2 pump down starting 04/25/2016 and Spring 13 and Spring 39 system pump outage starting 04/29/2016;
  - 06/06 to 07/01/2016 (25 Days), scheduled shut down for construction and electrical work, including delay to tie into dewatering pipeline.
- One shut down notification indicated that a spare pump that was needed to repair the interception system was not readily available. Permittee representative e-mail dated Friday, October 30, 2015 stated “*Plans are being made to purchase a new pump.*” Generally, spare parts and supply inventory are maintained according to permittee representatives.

## **ATTACHMENTS**

## Attachment A

NM0022306

Part II

Page 2

### D. Best Management Practices

This permit prohibits the discharge to the Red River of pollutants traceable to point source mine operations except in trace amounts. Implementation of these Best Management Practices (described below) is considered compliance with this prohibition.

The permittee shall maintain and properly operate seepage interception systems to prevent discharges of process related ground water to the Red River at Spring 13 and Spring 39. The permittee shall also properly operate the ground water withdrawal well below the toe of the Sugar Shack South deposit at a location approximately 100 yards southwest of the old mill site.

Spring 13 is defined as the seepage zone located on the north side of the Red River at the southwest base of Goathill, just east of Capulin Canyon.

Spring 39 is defined as the seepage zone located on the north side of the Red River approximately 500 feet east of Goathill Campground.

The permittee shall conduct monthly visual inspections of the Red River and its banks in the vicinity of the facility at the following known historic seeps and springs locations: Goathill Gulch seep, Sulphur Gulch seep, Portal springs, Cabins Springs, Upper Spring 39, Shaft Springs, Spring 39, and Spring 13. Quantitative estimates of flow will be noted and evaluated to identify changes in discharge or seepage trends. Data obtained from monitoring wells located below the mine front waste rock piles may be substituted for visual observation of seeps and springs in that area. A report summarizing the monthly inspections shall be submitted annually. In the event that the quantitative estimate of flow identifies and order of magnitude increase in the average discharge or seepage rates, the observation shall be reported to the Agencies within fourteen days of identification of the change. This fourteen day reporting requirement applies to Portal Spring (below the Sugar Shack deposit in the vicinity of the Old Mill), Spring 13, and Spring 39. This permit may be reopened if any significant discharge or seepage occurs or if it is determined that existing seepage in other locations is hydrologically connected to the mine. Should monitoring required under Part II.A of this permit show that the seepage interception system is In effective or find seepage traceable to point source mine operations, this permit may be modified or revoked and reissued to address those discharges.”

Attachment B



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

REGION 6  
1445 ROSS AVENUE, SUITE 1200  
DALLAS, TX 75202-2733

APR 18 2002

Mr. Allen Randle  
Vice President  
Molycorp, Inc.  
P.O. Box 469  
Questa, NM 87556-0469

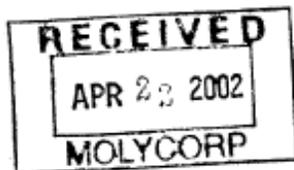
RE: Approval of Additional Ground Water Withdrawal Wells Under NPDES Permit No. NM0022306

Dear Mr. Randle:

My staff has completed the review of your request to added additional ground water withdrawal wells to the seepage collection system required under the NPDES permit for Molycorp's Questa mine.

We believe that the submitted information sufficiently supports construction of two additional extraction wells per your request. The request is therefore approved and deemed to meet the requirements of NPDES Permit No. NM0022306.

Should you need any information or have any additional questions please feel free to contact Scott Wilson of my staff at the above address or by telephone at (214) 665-7511.



Sincerely,

A handwritten signature in cursive script, appearing to read "Jack V. Ferguson".

Jack V. Ferguson, P.E.  
Chief  
NPDES Permits Branch

cc: New Mexico Environment Department

## Attachment C - BMP Background and Observations

### Springs and Systems Schemes

Spring 13 and 39 seepage areas are where white aluminum hydroxide precipitation occurs. Spring 13 is a seepage zone located along on the north side of the Red River just east of the mouth of Capulin Canyon. Spring 39 is a seepage zone located on the north side of the Red River, within an overflow channel and floodplain, just east of the mouth of Goathill Gulch in gallons per minute (gpm).

**Table 1: Reported Approximate Average Flow Rates (gpm)**

Year / Day	Spring 13	Spring 39	Source*
Report Year 2010	1	4.8	09/30/2010 CMI Annual Report Date
Report Year 2011	1	4.72	09/06/2011 CMI Annual Report Date
Report Year 2012	1	3.83	08/08/2012 CMI Annual Report Date**
Report Year 2013	0.6	3.18	09/13/2013 CMI Annual Report Date
Report Year 2014	0.833	2.3	09/10/2014 CMI Annual Report Date
Report Year 2015	0.33	3.6	10/01/2015 CMI Annual Report Date

*Table 1 Notes:*

*\*CMI Annual Report Periods are October thru September*

*\*\*Report transmittal date appears incorrect. NMED SWQB files indicate that the report was received in September of 2012.*

Revised Final Feasibility Study Report (“FS”), Questa Mine Site, Questa, NM, CERCLA Docket No. 06-09-01, November 16, 2009, Section 6.1.1.2 states *“The two spring collection systems remove metals and other inorganics loads from the shallow alluvial aquifer and reduce the load entering the Red River. Evaluation of Effectiveness of NPDES Best Management Practices prepared by URS, Denver, Colorado dated April 19, 2006 states “The purpose of the BMPs is to mitigate the impact of groundwater containing metals and other inorganics, whether mine-related or not, on the Red River.”*

Both the separate Spring 13 and Spring 39 seepage interception systems consist of perforated French drains placed approximately 1.5 feet below the low water level of the river. The drains flow via gravity to concrete vaults where the water is pumped through the pipeline to collection systems. The French drain at Spring 13 is approximately 1,000 feet long. The French drain at Spring 39, originally 400 feet long, was upgraded in 2005 to include a second drain next to the original drain. The seepage interception systems are designed to collect shallow alluvial seepage. However, the two systems do not eliminate the load of metals and other inorganic chemicals entering the Red River. Operation of the seepage interception systems began in February 2003.

Three ground water withdrawal wells (GWW-1, -2, and -3) were installed just downgradient of the toes of the three roadside waste rock piles to capture potential discharges from point source mine operations through a hydrologic connection below the Sugar Shack waste rock pile. These wells collect acidic, metals-laden water impacted by acid rock drainage from the waste rock piles to prevent such water from flowing downgradient and entering into the Red River at zones of upwelling at the Spring 39 area. The wells are designed to extract alluvial ground water at a rate that is approximately two to three times the estimated ground water flux to the Red River alluvial aquifer from the Sulphur Gulch watershed to the Sugar Shack South watershed. The water pumped from each withdrawal well is a mixture of Red River alluvial ground water and waste rock/scar leachate from the pre-existing drainages north of the river.

Collected water continues to be transported through a pipeline to be combined at Sump 5000 at the Mill Area. Lime is added to the collected water to adjust the pH of the water between 6.0 to 9.0 standard units to meet NMED GWQB DP-933 requirements. Collected water continues to be transported through the pipeline and disposed at the Tailing Facility. With the completion of a Water Treatment Plant at the Mill Area, flow to the tailing facility is to cease under a schedule of compliance under the 2013 NPDES permit.

## CMI's O&M Summary

Operation and maintenance manuals (standard operating procedures or SOP) and schedules are established. The current CMI, Questa Mine, Water Collection System Inspection SOP is dated September 5, 2014.

Daily inspections of the BMP systems are logged. Plant records, daily inspection written logs, include dates of equipment maintenance and repair. Daily inspection records also include instantaneous flow rates of the components of the water collection system.

Historian software dataset or data logger for daily totalized flow since approximately 2010 continues to experience communication errors or data anomalies. Interruptions are due to lightning, maintenance and other unforeseen activities. The recording system for totalized daily flow (Kgals/day) does not overwrite during periods of communication gaps. Any generated "raw reports" from the software have to be reviewed, corrected and/or annotated by facility staff. Communication errors (periods when the system cannot be monitored remotely) do not necessarily indicate that the water collection system or portions of the systems are not pumping. A new data system is to be installed with the construction of the Water Treatment Plant at the Mill Area according to permittee representatives.

Periods of operation or pumping shut down and power outages continue (e.g., scheduled annual maintenance, repairs, lightning, line breaks, utility corridor work and other unforeseen activities). Outages also occurred when facilities are decommissioned and work associated with the remedial action and construction of the Water Treatment Plant at the Mill Area.

Scheduled annual maintenance that includes clean out to remove precipitates (scale) that reduces gravity flow of water into the drain of the Spring 13 and Spring 39 seepage interception systems typically occurs in October.

Spring monthly inspections required by the NPDES Permit are logged and entered into a database. The records include estimated flow rates. Reports required by the NPDES Permit, summarizing the spring monthly inspections, are submitted annually.

## Production or Pumping Rates

Flow or pumping rates at Spring 13 and Spring 39 seepage interception systems are lower than described when the systems were first installed. Based on reviewed documents and records, the following pumping or production water rates have been recorded or reported:

**Table 2: Approximate Production or Pumping Rates (gpm)**

Year/Day	Spring 13	Spring 39	GWW (1+2+3)	Source
	~50	~95		2006 USEPA NPDES Permit, Part II.A
Before 2004 Cleaning	27 to 10			2006 URS Evaluation of Effectiveness*
2002 - 2005	35 to 12	31	400-460 (98+80+237)	2006 URS Evaluation of Effectiveness*
Calendar Year 2006	18	84	400	2009 CMI Final FS Report**
See Above	~20	80	420	2010 USEPA ROD, Section 2.5.1.2
11/2013-12/2014	~2-9	~29-67		2014 NPDES CEI Report***
1/2015-06/2015	~2-6	~13-50		2014 NPDES CEI Report****
2016-06-02	6	50	522 (107+176+239)	CMI Daily Log (instantaneous)
2016-07-01	6	48	534 (113+177+244)	CMI Daily Log (instantaneous)
2016-07-10	5	50	531 (112+177+242)	CMI Daily Log (instantaneous)

Table 2 Notes:

\*Evaluation of Effectiveness of NPDES Best Management Practices was prepared by URS, Denver, Colorado dated April 19, 2006.

--notes continued on next page--

Continued

*\*\*CMI Final Feasibility Study (FS) Report, Appendix C Groundwater Budget, Loading Analyses, and Operational Water Usage for the Mine Site, Revision No. 2.0, dated August 25, 2009. FS described Spring 13 Seepage Interception System flows to be approximately 13 to 32 gpm (2003 thru 2006) and Spring 39 Seepage Interception System flows to be approximately 90 gpm (2006).*

*\*\*\*Reviewed recorded flows for the Spring 13 interception systems for November thru December 2013; January 2014, and March thru June 2014 indicate flow ranged from 3,000 to 13,000 gallons per day (converted to 2.083 to 9.028 gpm). Reviewed recorded flows for the Spring 39 interception systems for November thru December 2013; January 2014, and March thru June 2014 indicate flow ranged from 42,000 to 97,000 gallons per day (converted to 29.17 to 67.36 gpm).*

*\*\*\*\*Reviewed CMI recorded flow rates for the Spring 13 interception system from November 2013 thru December 2014 indicate a range from 3,000 to 13,000 gallons per day (converted to 2.083 to 9.028 gpm). Reviewed recorded flow rates for the Spring 39 interception system from November 2013 thru December 2014 indicate a range from 42,000 to 97,000 gallons per day (converted to 29.17 to 67.36 gpm). Based on reviewed CMI's recordkeeping from January thru June 2015, Spring 13 interception system pumping rates when the system operated ranged from 3,000 to 9,000 gallons per day (converted to 2.083 to 6.25 gpm); and Spring 39 interception system pumping rates when the system operated ranged from 19,000 to 72,000 gallons per day (converted to 13.19 to 50 gpm).*

### **Evaluation of Effectiveness**

An Evaluation of Effectiveness of NPDES Best Management Practices prepared for CMI by URS, Denver, Colorado dated April 19, 2006 was based on the first three years of operation (February 2003 through 2005). The evaluation included water pumped and/or removed; trends in groundwater chemistry; constituent load removed; in-stream river concentrations upstream and downstream of the interception systems; seepage flow rates at springs; and visual observations along the riverbank. The evaluation report described the difficulties in comparing up and downstream concentrations in the Red River when trying to determine effectiveness of the seepage interception systems. Difficulties include collecting samples with identical flow conditions, measuring flow, and that variability may be within the error of sample collection. The evaluation report described that composite samples were collected using a depth-integrated method across the river at equal spacing to obtain representative sample across the river, collected as close as possible, in time.

### **Red River, Spring 13 and Spring 39 Observations**

Photo observations from the 2014 and 2015 CEI Reports, and obtained during the 2016 NPDES RI are provided below for comparison, and include:

- Upstream of CMI Mine Boundary
- Spring 39 Seepage Interception System Area
- Spring 13 Seepage Interception System Area

The 2014 NPDES CEI report also provided photos of springs and seepage interception system from a site visit conducted by NMED GWQB staff on June 17, 2014. The observations were made during different flow rates of the Red River. Recorded flows at USGS 08265000 Gage, Red River near Questa (Latitude 36.70331110, Longitude -105.56843060) in cubic feet per second (ft<sup>3</sup>/sec) varied during site visits as follows:

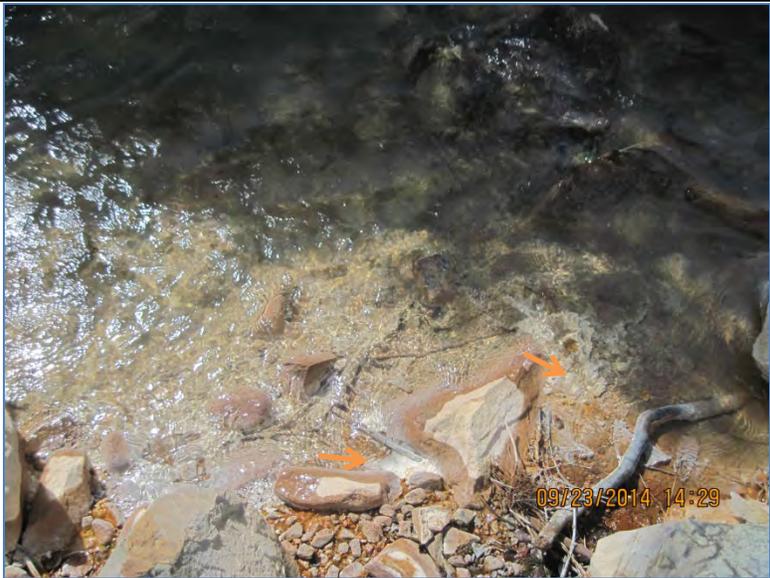
**Table 3: Red River near Questa Flows at USGS 08265000**

Site Visit Date	ft <sup>3</sup> /sec	Approximate gpm	Data Comment
06/17/2014	68	30,521	mean
09/23/2014	18	8,079	mean
09/28/2015	24	10,772	mean
06/02/2016	127	57,000	provisional mean
06/13/2016	51	22,890	provisional mean

<b>NMED/SWQB Official Photograph Log Photo # 2 of 2014 CEI Report</b>		
Photographer: Erin S. Trujillo	Date: 09/23/2014	Time: 1402 hours
City/County: East of Questa / Taos County		State: New Mexico
Location: CMI Questa Mine, Spring 39 Seepage Interception System Area		
Subject: Visible white precipitate and surface water at Spring 39 Seepage Interception System.		



<b>NMED/SWQB Official Photograph Log Photo # 4 of 2014 CEI Report</b>		
Photographer: Erin S. Trujillo	Date: 09/23/2014	Time: 1429 hours
City/County: East of Questa / Taos County		State: New Mexico
Location: CMI Questa Mine, Adjacent to Spring 13 Seepage Interception System Area, Along bank of Red River		
Subject: Arrows point to examples of visible white precipitate in Red River.		



<b>NMED/SWQB Official Photograph Log Photo # 5 of 2014 CEI Report</b>		
Photographer: Erin S. Trujillo	Date: 09/23/2014	Time: 1431 hours
City/County: East of Questa / Taos County		State: New Mexico
Location: CMI Questa Mine, Downstream of Spring 13 Seepage Interception System Area		
Subject: Example of red (rusty in color) slimy deposits, possibly iron bacteria at seep along bank of Red River. Green algal growth mat at seep may be from increased nutrients (nitrogen and phosphorus).		



<b>NMED/SWQB Official Photograph Log Photo # 7 of 2014 CEI Report</b>		
Photographer: Erin S. Trujillo	Date: 09/23/2014	Time: 1434 hours
City/County: East of Questa / Taos County		State: New Mexico
Location: CMI Questa Mine, Downstream of Spring 13 Seepage Interception System Area.		
Subject: Looking downstream at Red River.		



<b>NMED/SWQB          Official Photograph Log          Photo # 3 of 2015 CEI Report</b>		
Photographer: Erin S. Trujillo	Date: 09/28/2015	Time: 1148 hours
City/County: East of Questa / Taos County		State: New Mexico
Location: CMI Questa Mine, Downstream of Spring 13 Seepage Interception System Area, North bank of Red River		
Subject: Examples of visible white precipitate and white with brown foam along water's edge of Red River. A brown color on this type of foam is an indicator that the source is not from man-made commercial detergents.		



<b>NMED/SWQB          Official Photograph Log          Photo # 4 of 2015 CEI Report</b>		
Photographer: Erin S. Trujillo	Date: 09/28/2015	Time: 1151 hours
City/County: East of Questa / Taos County		State: New Mexico
Location: CMI Questa Mine, Downstream of Spring 13 Seepage Interception System Area, Along north bank		
Subject: Looking upstream (generally east), example of red (rusty in color) slimy deposits, possibly iron bacteria; and green algal growth mats at seep along bank of Red River. Algal growth may be from increased nutrients (nitrogen and phosphorus).		



<b>NMED/SWQB          Official Photograph Log          Photo # 5 of 2015 CEI Report</b>		
Photographer: Erin S. Trujillo	Date: 09/28/2015	Time: 1314 hours
City/County: East of Questa / Taos County		State: New Mexico
Location: CMI Questa Mine, Spring 39 Seepage Interception System Area		
Subject: Visible white precipitates (aluminum hydroxide) on surface water, and PVC pipe for trench system at Spring 39 Seepage Interception System.		



<b>NMED/SWQB          Official Photograph Log          Photo # 6 of 2015 CEI Report</b>		
Photographer: Erin S. Trujillo	Date: 09/28/2015	Time: 1329 hours
City/County: East of Questa / Taos County		State: New Mexico
Location: North bank of Red River, Approximately one mile east of CMI Questa Mine Boundary		
Subject: Looking upstream (generally east), dry red, rusty in color, deposits along north bank of Red River.		



**NMED/SWQB  
Official Photograph Log  
Photo # 7 of 2015 CEI Report**

Photographer: Erin S. Trujillo	Date: 09/28/2015	Time: 1330 hours
City/County: East of Questa / Taos County	State: New Mexico	
Location: North bank of Red River, Approximately one mile east and upstream of CMI Questa Mine Boundary		
Subject: White with brown foam along north bank of Red River. A brown color on this type of foam is an indicator that the source is not from man-made commercial detergents.		



<b>NMED/SWQB Official Photograph Log Photo # 1</b>		
Photographer: Daniel Valenta	Date: 06/02/2016 (013)	Time: 1119 hours
City/County: East of Questa / Taos County		State: New Mexico
Location: Red River Floodplain, Approximately one mile east and upstream of CMI Questa Mine Boundary		
Subject: Red (rusty in color) deposits, possibly iron bacteria in floodplain.		



<b>NMED/SWQB Official Photograph Log Photo # 2</b>		
Photographer: Daniel Valenta	Date: 06/02/2016 (016)	Time: 1120 hours
City/County: East of Questa / Taos County		State: New Mexico
Location: From north bank of Red River, Approximately one mile east and upstream of CMI Questa Mine Boundary		
Subject: Arrow points to what appeared to be white foam, possibly aluminum hydroxide precipitates, on opposite stream bank.		



<b>NMED/SWQB Official Photograph Log Photo # 3</b>		
Photographer: Daniel Valenta	Date: 06/02/2016 (055)	Time: 1200 hours
City/County: East of Questa / Taos County		State: New Mexico
Location: CMI Questa Mine, Spring 39 Seepage Interception System Area		
Subject: Flowing water and floating visible white precipitates (aluminum hydroxide), and PVC pipe for trench system. See similar observations in Photo # 2 of 2014 CEI Report and Photo #5 of 2015 CEI Report above. Near location shown in 07/13/2016 Photo #13 below.		



<b>NMED/SWQB Official Photograph Log Photo # 4</b>		
Photographer: Daniel Valenta	Date: 06/02/2016 (059)	Time: 1203 hours
City/County: East of Questa / Taos County		State: New Mexico
Location: CMI Questa Mine, Spring 39 Seepage Interception System Area		
Subject: Upper Spring 39 Seepage Interception System Area was dry at ground surface.		



<b>NMED/SWQB Official Photograph Log Photo # 5</b>		
Photographer: Daniel Valenta	Date: 06/02/2016 (066)	Time: 1212 hours
City/County: East of Questa / Taos County		State: New Mexico
Location: CMI Questa Mine, Near Spring 39 Seepage Interception System Area		
Subject: Red (rusty in color) slimy deposits, possibly iron bacteria, in floodplain between Spring 39 and Red River. Similar observations upstream of CMI Questa Mine Boundary were observed as shown in 06/02/2016 Photo # 1 above.		



<b>NMED/SWQB Official Photograph Log Photo # 6</b>		
Photographer: Daniel Valenta	Date: 06/02/2016 (080)	Time: 1245 hours
City/County: East of Questa / Taos County		State: New Mexico
Location: CMI Questa Mine, Near Spring 13 Seepage Interception System Area, Along north bank of Red River		
Subject: Looking upstream, example of red (rusty in color) slimy deposits, possibly iron bacteria at seep along bank of Red River. PVC pipe is cleanout for Spring 13 seepage interception system. Near location shown in 07/13/2016 Photos #11 and 12 below.		



<b>NMED/SWQB          Official Photograph Log          Photo # 7</b>		
Photographer: Daniel Valenta	Date: 06/02/2016 (090)	Time: 1248 hours
City/County: East of Questa / Taos County		State: New Mexico
Location: CMI Questa Mine, Near Spring 13 Seepage Interception System Area, North bank of Red River		
Subject: Example of aluminum precipitates and red (rusty in color) slimy deposits, possibly iron bacteria at waters edge. Similar observations shown in Photo #3 of 2014 CEI Report.		



<b>NMED/SWQB          Official Photograph Log          Photo # 8</b>		
Photographer: Daniel Valenta	Date: 06/02/2016 (093)	Time: 1250 hours
City/County: East of Questa / Taos County		State: New Mexico
Location: CMI Questa Mine, Near Spring 13 Seepage Interception System Area, Along bank of Red River		
Subject: Looking downstream at Red River. Near location shown in Photo # 7 of 2014 CEI Report above.		



<b>NMED/SWQB          Official Photograph Log          Photo # 9</b>		
Photographer: Daniel Valenta	Date: 07/13/2016 (010)	Time: 1032 hours
City/County: East of Questa / Taos County		State: New Mexico
Location: Red River, Approximately one mile east and upstream of CMI Questa Mine Boundary		
Subject: Arrow points to what appeared to be white foam, possibly aluminum hydroxide precipitates, on opposite stream bank. Similar observations were made on 06/02/2016 (see Photo #2 above)		



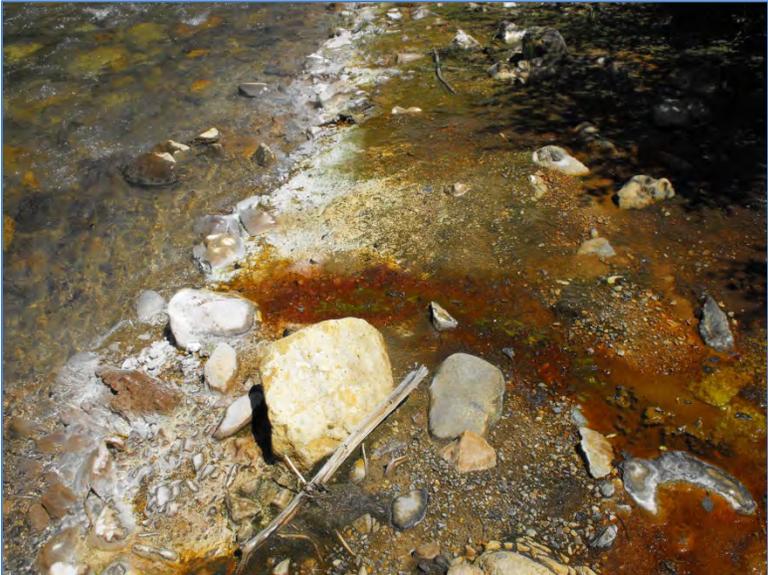
<b>NMED/SWQB          Official Photograph Log          Photo # 10</b>		
Photographer: Daniel Valenta	Date: 07/13/2016 (032)	Time: 1125 hours
City/County: East of Questa / Taos County		State: New Mexico
Location: CMI Questa Mine, Near Spring 13 Seepage Interception System Area, Along bank of Red River		
Subject: Looking downstream at Red River at red (rusty in color) slimy deposits and green algal growth mats at waters edge. Near location shown in Photo # 7 of 2014 CEI Report and 06/02/2016 Photo #8 above.		



<b>NMED/SWQB Official Photograph Log Photo # 11</b>		
Photographer: Daniel Valenta	Date: 07/13/2016 (034)	Time: 1125 hours
City/County: East of Questa / Taos County		State: New Mexico
Location: CMI Questa Mine, Near Spring 13 Seepage Interception System Area, North bank of Red River		
Subject: Red (rusty in color) slimy deposits and green algal growth mats at seep.		



<b>NMED/SWQB Official Photograph Log Photo # 12</b>		
Photographer: Daniel Valenta	Date: 07/13/2016 (034)	Time: 1125 hours
City/County: East of Questa / Taos County		State: New Mexico
Location: CMI Questa Mine, Near Spring 13 Seepage Interception System Area, Along bank of Red River		
Subject: Flow from seep shown in photo above entering Red River.		



<b>NMED/SWQB          Official Photograph Log          Photo # 13</b>		
Photographer: Daniel Valenta	Date: 07/13/16 (041)	Time: 1135 hours
City/County: East of Questa / Taos County		State: New Mexico
Location: CMI Questa Mine, Spring 39 Seepage Interception System Area		
Subject: Looking from roadway embankment, flowing and floating visible white precipitates (aluminum hydroxide), and PVC pipe for trench system at Spring 39 Seepage Interception System. Near location shown in Photo #3 above.		



<b>NMED/SWQB          Official Photograph Log          Photo # 14</b>		
Photographer: Daniel Valenta	Date: 07/13/2016 (042)	Time: 1137 hours
City/County: East of Questa / Taos County		State: New Mexico
Location: CMI Questa Mine, Near Spring 39 Seepage Interception System Area		
Subject: Visible white precipitate flowing in channel downstream of Spring 39 Seepage Interception System toward Red River. Arrow points to Red River in photo background.		

