



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
REGION 8, MONTANA OFFICE  
FEDERAL BUILDING, 10 W. 15<sup>th</sup> STREET, SUITE 3200  
HELENA, MONTANA 59626

Ref: 8MO

**ACTION MEMORANDUM AMENDMENT**

DATE: June 23, 2008

SUBJECT: Request for an Amendment to the Action Memorandum dated June 21, 1996 for a Non-Time Critical Removal Action (NTCRA) at the Mouat Industries Superfund Site, Town of Columbus (Town), Montana.

FROM: Roger Hoogerheide, Remedial Project Manager  
Montana Office, 8MO

TO: Carol Campbell, Acting Assistant Regional Administrator  
Office of Ecosystems Protection and Remediation, 8EPR

THROUGH: John F. Wardell, Director  
Montana Office, 8MO

Sharon Kercher, Director  
Technical Enforcement Program, ENF-RC

Matthew Cohn, Supervisory Attorney  
Legal Enforcement Program, ENF-L

Site ID #08-65

Category of Removal: Non-Time Critical

NPL Status – FINAL - June 10, 1986

**I. PURPOSE**

This Action Memorandum Amendment has four (4) purposes.

First, it is intended to clarify the Points of Compliance for groundwater at the Site.

Second, it is intended to ensure that the restriction on groundwater use in the Block Placement Area will be maintained as long as institutional controls are

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necessary. This has been done through a modification in the Town of Columbus' Superfund Overlay District Ordinance.

Third, it is intended to clarify the 30 year groundwater monitoring requirement identified in the June 21, 1996 Action Memorandum.

Fourth, MDEQ and EPA will prepare a Post Removal Site Control Plan pursuant to Section 300.415(1)(3) of the NCP.

## **II. SITE CONDITIONS AND BACKGROUND**

### **A. Site Description**

#### **1. Removal Site Evaluation.**

The completion of the removal action described in the June 21, 1996 Action Memorandum was documented in the *Preliminary Site Closeout Report Mouat Industries Site, dated September 1996*.

Since waste was left in place and Site conditions do not allow for unlimited use and unrestricted exposure, Five-Year Reviews are required as a matter of policy. The first Five-Year Review was completed in March, 2008. One of the Recommendations and Follow-up Actions from this review is to prepare this Action Memorandum Amendment which has four purposes as described in Section I.

#### **2. Physical Location**

The Site is comprised of approximately 4.5 acres located in an industrial area of Columbus, Montana, in Stillwater County. The Site is just north of the Columbus Airport and 0.6 miles north of the Yellowstone River. Columbus has a population of approximately 2000.

#### **3. Site Characteristics**

The Site slopes gently to the southeast, towards the Yellowstone River. The shallow site geology consists of up to three feet of imported gravel overlying fine grained sand and clay to a depth of 11 feet. This is underlain by 10 to 25 feet of sand, gravel and cobbles which, in turn, is underlain by shale bedrock. The shale is relatively impermeable and acts as a barrier against the vertical migration of shallow groundwater.

Groundwater is present at a depth of between six and thirteen feet below ground surface. The aquifer is generally unconfined, but may be confined

in places where shallow clay and silt are present. The saturated thickness of the shallow aquifer ranges from 13 to 27 feet below ground surface at the Site but thins to the south, near the Yellowstone River. Land use at the Site is designated as light and heavy industrial. Residential areas lie within 0.5 miles of the Site.

The Site was first developed for industrial use in the mid-1950's. A chromium processing facility was constructed on the Site in 1957 by William G. Mouat and Mouat Industries and was leased from the Town. The facility processed chromite ore mined in south-central Montana into high-grade sodium dichromate generating sodium sulfate process wastes containing sodium chromate and sodium dichromate.

Although ownership of the processing facility changed hands several times, the property itself was owned largely by the Town since the Site was first developed. The Town still owns most of the Site with the remainder owned by Timberweld Manufacturing for use as an open-space storage and material lay-down area.

The initial concern was the contamination of groundwater by total chromium and hexavalent chromium. The only remaining activities at the site are groundwater monitoring, Five-Year Reviews and continuation of already-established Institutional Controls (ICs). ICs are on record as Chapter 17.76 of the Official Code of the Town of Columbus, Montana and through the deed conveying title to the portion of the property owned by Timberweld Manufacturing that is located within the block placement area. Requirements of the Superfund Overlay District (SOD) ordinance are enforced by the zoning authority of the Town and cannot be amended, suspended, or otherwise rendered ineffective without the prior written approval of EPA and MDEQ.

At this time, the primary concern at the Site is to establish long term groundwater monitoring requirements and to ensure that ICs are maintained as long as appropriate to prevent unrestricted use and unlimited exposure.

#### **4. Release or Threatened Release into the Environment of a Hazardous Substance, Pollutant or Contaminant.**

Unless the monitoring of groundwater is continued at specified compliance points and the land use and groundwater use restrictions are maintained within the Block Placement Area, there could be negative impacts on human health and the environment through exposure to groundwater contaminated with chromium.

## 5. NPL Status.

The site was listed on the NPL on June 10, 1986.

### B. Other Actions to date

#### 1. Previous removal actions were described in three (3) Action Memoranda.

- The federally funded removal action pursuant to the Action Memorandum issued on March 26, 1990 involved fencing and drainage control.
- The PRP-lead removal action pursuant to the Action Memorandum dated September 5, 1991 implemented certain treatment actions, as well as some soil excavation and off-site disposal for soils contaminated with chromium at the Site.
- The PRP-lead removal action pursuant to the Action Memorandum dated June 21, 1996 addressed the contaminated groundwater at the Site.

Additional details regarding these response actions are available in the *Preliminary Site Close Out Report for the Mouat Industries Site*, dated September 1996.

#### 2. Current Actions

None

### C. State and Local Authorities Role

The State of Montana concurs with this action. The Town agrees to provide access to the Site and to enforce ICs. It is the responsibility of the Town to maintain the ICs.

## III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES.

Conditions at the Site present an imminent and substantial endangerment to human health and the environment and meet the criteria for initiating a Removal Action under 40 C.F.R. section 300.415(b)(2) of the NCP. The following factors from

Section 300.415(b)(2) of the NCP form the basis for EPA's determination of the threat presented and the appropriate action to be taken:

- Actual or potential exposure to nearby human populations from hazardous substances or pollutants or contaminants;
- Elevated levels of hazardous substances or pollutants in groundwater.

#### **IV. ENDANGERMENT DETERMINATION**

The actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health or welfare or the environment.

#### **V. PROPOSED ACTIONS**

##### **A. Proposed Action Description**

##### **1. Point of Compliance**

Under CERCLA, the groundwater Point of Compliance is generally at the waste management unit boundary as noted in the preamble to the National Oil and Hazardous Substances Pollution Contingency Plan (NCP): "EPA believes that [groundwater] remediation levels should generally be attained throughout the contaminated plume, or at and beyond the edge of the waste management area, when the waste is left in place." (55 FR 8753). As such, the Point of Compliance (POC) for groundwater is at the boundary of the block disposal area.

Similarly, The Administrative Rules of Montana specify that a down gradient monitoring system must be installed at the relevant POC that ensures detection of groundwater contamination in the uppermost aquifer. When physical obstacles preclude installation of groundwater monitoring wells at the relevant POC at existing units, the down gradient monitoring system may be installed at the closest practicable distance hydraulically down gradient from the relevant POC specified by the MDEQ.

EPA and MDEQ have determined that the monitoring POC beyond the property boundary is appropriate at this site because the following situations are demonstrated:

- The NPL Site is a small parcel of land with limited space for onsite monitoring wells;

- It is not physically practicable to monitor groundwater quality at the property boundary because of the existence of a deep ditch and a paved road;
- The down gradient property is the municipal airport. This property was owned by the Town at the time the contamination was discovered; and
- The use of the groundwater on the down gradient property can be controlled to prevent unacceptable exposure through re-establishment of the original Superfund Overlay District should monitoring and statistical evaluation of groundwater data demonstrate an increase in concentration levels.

The four wells (RMIS-4, RMIS-5, MIS-15, and MIS-16) located immediately along this down gradient perimeter that were identified in the 1996 Action Memorandum as the post-closure monitoring wells have been chosen as the Site's Point of Compliance. These wells were chosen as the monitoring POC because it is technically infeasible to place the wells at the unit boundary, each well has long, deep screen intervals and thus these wells are more likely to intercept groundwater if the water table drops due to prolonged drought conditions. Also, these wells have historic water quality data.

## **2. Institutional Controls**

The Town's Superfund Overlay District Ordinance was modified in March 2008 to clarify that restrictions on groundwater use will be maintained in the block placement area. Those restrictions prohibit new wells or other groundwater extraction systems within the block placement area. Excavation below the groundwater table for any purpose is also prohibited except for temporary excavation work necessary for construction purposes including placement of footings and utilities. The SOD will be maintained as long as restrictions are needed to limit use of or exposure to either the groundwater or the property where the blocks were placed.

As part of the future work to be performed at the Site, the Town will continue to provide access to the Site and to enforce ICs. MDEQ and EPA agree to meet with the Town to discuss the Site land use and groundwater use restrictions at least once every 5 years. These meetings are intended to help all parties better understand the issues associated with these restrictions as well as to notify the EPA and MDEQ of any upcoming land use changes that may require a more comprehensive review. The Town will be required to notify MDEQ and EPA of potential or proposed land use changes. EPA and MDEQ will discuss any proposed land use change and decide if they need to review and/or approve any plan, design or other document related to the proposed land use.

## **3. Groundwater Monitoring**

The 1996 Action Memorandum required that annual groundwater monitoring be conducted for 30 years as a result of waiving Montana's Class II landfill ARAR

requirement. This monitoring began in 1996 and was temporarily suspended in 2002. Annual monitoring resumed in 2008. The groundwater monitoring will continue as long as waste remains in place; however the frequency of monitoring may be modified based on monitoring results. Current data indicates that there is not a release from the landfill. However, in the unlikely event that contaminant levels were to increase over time, the remedy would be re-evaluated.

Monitoring wells were chosen based on the general direction of groundwater flow. The groundwater monitoring network consists of one well upgradient (RMIS-1) of the block placement area, four wells within or adjacent to the block placement area (MO-09, MO-26, MO-25, and RMIS-2) and six wells immediately down gradient of the block placement area (MO-10, MO-11, MIS-15, MIS-16, RMIS-4, and RMIS-5). In addition to the 11 wells being sampled, two Quality Assurance/Quality Control samples will also be collected in the field – one duplicate and one field blank.

All samples will be analyzed for Chromium using EPA methods 200.7/200.8 for total chromium and EPA methods 6010/6020 for dissolved chromium analyses. This monitoring effort is not considered part of the response actions identified in previous Action Memorandums, but is intended to fulfill the Post Removal Site Control of the treated block placement area as specified in this Action Memorandum Amendment. It is the responsibility of EPA to fund and for EPA and MDEQ to implement these requirements. EPA will conduct all activities pursuant to Section 300.415(1)(3) of the NCP. The scope of monitoring may be revised based on Five Year Reviews and/or consultation with stakeholders but at a minimum monitoring of the upgradient and POC wells will occur at least once every 5 years as long as hazardous substances remain at the Site above levels that allow for unrestricted use and unlimited exposure.

#### **4. Post Removal Site Control Plan**

MDEQ and EPA will develop a Post Removal Site Control Plan that contains the Points of Compliance for groundwater, upgradient and source area monitoring points, frequency of sampling and analytical methods. It will also establish performance standards to be met in the event that groundwater restrictions are modified. A section of this Plan will discuss ICs and establish measures to ensure that the Agencies are periodically reviewing ICs.

#### **B. Contribution to Removal Performance**

This Removal Action is consistent with the previous Removal Actions.

#### **C. Engineering Evaluation/Cost Analysis (EE/CA)**

An EE/CA was generated in May of 1996. A copy is available as Attachment 3 to the June 21, 1996 Action Memorandum.

**D. Applicable or Relevant and Appropriate Requirements (ARARs)**

A complete discussion of federal and state ARARs is included as Attachment 5 of the June 21, 1996 Action Memorandum. The ARARs established in the 1996 Action Memorandum continue to apply today. The standards needed for protectiveness and to ensure the long-term performance of the remedy are as follows:

- Federal drinking water Maximum Contaminant Level (MCL) for chromium which is 0.1 mg/L;
- State water quality standard for chromium which is 0.1 mg/L; and
- Class II landfill construction and monitoring requirements.

**E. Project Schedule**

1. A Post Removal Site Control Plan will be developed by September 2008; and
2. Groundwater monitoring resumed in May 2008

**F. Estimated Costs**

Costs are estimated to be \$250,000 net present value (\$350,000 total costs).

**VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN.**

Without established Points of Compliance and assurance that the restriction on groundwater use in the Block Placement Area remains in place until ICs are no longer necessary, continued protection of human health and the environment cannot be determined.

**VII. OUTSTANDING POLICY ISSUES**

The response actions conducted at the Site resulted in waste being left in place. The response actions were also removal actions rather than remedial actions. Therefore, a Five-Year Review is not required under Statute but is required as a matter of policy.

Further, the removal actions were expected to result in Site conditions that do not allow for unlimited use and unrestricted exposure. Such conditions also require the implementation of a Five-Year Review as a matter of policy.

The June 1996 Action Memorandum was for a Non-Time Critical Removal Action. NTCRAs are normally administered by the remedial program and use remedial spending authority to pay for these activities pursuant to Section 300.415(l)(3) of the NCP.

## VIII. ENFORCEMENT

A separate enforcement memorandum dated September 29, 1997 discusses matters related to the PRPs and their liability for past and future response actions and associated costs.

## IX. RECOMMENDATION

This document represents the selected Removal Action for the Mouat Industries Site in the Town of Columbus, Montana. The selected Removal Action was developed in accordance with CERCLA, as amended, and is not inconsistent with the NCP. This decision was based on the administrative record for the Site. This Action Memorandum authorizes the expenditure of \$350,000 in total costs.

Conditions at the Site met the NCP criteria for removal set forth in 40 C.F.R. Section 300.415 (b) (2) and I recommend your approval of the proposed fund-lead Removal Action.

Approval: Carol S. Campbell

Date: 7/11/08

Carol Campbell  
~~Acting~~ Assistant Regional Administrator  
Office of Ecosystem Protection and Remediation

Disapproval: \_\_\_\_\_

Date: \_\_\_\_\_

Carol Campbell  
Acting Assistant Regional Administrator  
Office of Ecosystem Protection and Remediation

cc: Bill Muray, EPR-SR  
David Ostrander, EPR-SA  
Daryl Reed, MDEQ  
Bill Kirley, MDEQ  
Richard Sisk, ENF-L  
Rebecca Thomas, EPR-SR  
Kelcey Land, ENF-RC  
Dave Sturn, 8MO  
Chuck Sands, OSRTI, 5204G



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## **5. NPL Status.**

The site was listed on the NPL on June 10, 1986.

## **B. Other Actions to date**

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### **2. Current Actions**

None

## **C. State and Local Authorities Role**

The State of Montana concurs with this action. The Town agrees to provide access to the Site and to enforce ICs. It is the responsibility of the Town to maintain the ICs.

## **III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES.**

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The actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health or welfare or the environment.

#### **V. PROPOSED ACTIONS**

##### **A. Proposed Action Description**

##### **1. Point of Compliance**

Under CERCLA, the groundwater Point of Compliance is generally at the waste management unit boundary as noted in the preamble to the National Oil and Hazardous Substances Pollution Contingency Plan (NCP): "EPA believes that [groundwater] remediation levels should generally be attained throughout the contaminated plume, or at and beyond the edge of the waste management area, when the waste is left in place." (55 FR 8753). As such, the Point of Compliance (POC) for groundwater is at the boundary of the block disposal area.

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EPA and MDEQ have determined that the monitoring POC beyond the property boundary is appropriate at this site because the following situations are demonstrated:

- The NPL Site is a small parcel of land with limited space for onsite monitoring wells;

- It is not physically practicable to monitor groundwater quality at the property boundary because of the existence of a deep ditch and a paved road;
- The down gradient property is the municipal airport. This property was owned by the Town at the time the contamination was discovered; and
- The use of the groundwater on the down gradient property can be controlled to prevent unacceptable exposure through re-establishment of the original Superfund Overlay District should monitoring and statistical evaluation of groundwater data demonstrate an increase in concentration levels.

The four wells (RMIS-4, RMIS-5, MIS-15, and MIS-16) located immediately along this down gradient perimeter that were identified in the 1996 Action Memorandum as the post-closure monitoring wells have been chosen as the Site's Point of Compliance. These wells were chosen as the monitoring POC because it is technically infeasible to place the wells at the unit boundary, each well has long, deep screen intervals and thus these wells are more likely to intercept groundwater if the water table drops due to prolonged drought conditions. Also, these wells have historic water quality data.

## **2. Institutional Controls**

The Town's Superfund Overlay District Ordinance was modified in March 2008 to clarify that restrictions on groundwater use will be maintained in the block placement area. Those restrictions prohibit new wells or other groundwater extraction systems within the block placement area. Excavation below the groundwater table for any purpose is also prohibited except for temporary excavation work necessary for construction purposes including placement of footings and utilities. The SOD will be maintained as long as restrictions are needed to limit use of or exposure to either the groundwater or the property where the blocks were placed.

As part of the future work to be performed at the Site, the Town will continue to provide access to the Site and to enforce ICs. MDEQ and EPA agree to meet with the Town to discuss the Site land use and groundwater use restrictions at least once every 5 years. These meetings are intended to help all parties better understand the issues associated with these restrictions as well as to notify the EPA and MDEQ of any upcoming land use changes that may require a more comprehensive review. The Town will be required to notify MDEQ and EPA of potential or proposed land use changes. EPA and MDEQ will discuss any proposed land use change and decide if they need to review and/or approve any plan, design or other document related to the proposed land use.

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#### **4. Post Removal Site Control Plan**

MDEQ and EPA will develop a Post Removal Site Control Plan that contains the Points of Compliance for groundwater, upgradient and source area monitoring points, frequency of sampling and analytical methods. It will also establish performance standards to be met in the event that groundwater restrictions are modified. A section of this Plan will discuss ICs and establish measures to ensure that the Agencies are periodically reviewing ICs.

#### **B. Contribution to Removal Performance**

This Removal Action is consistent with the previous Removal Actions.

#### **C. Engineering Evaluation/Cost Analysis (EE/CA)**

An EE/CA was generated in May of 1996. A copy is available as Attachment 3 to the June 21, 1996 Action Memorandum.

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**E. Project Schedule**

1. A Post Removal Site Control Plan will be developed by September 2008; and
2. Groundwater monitoring resumed in May 2008

**F. Estimated Costs**

Costs are estimated to be \$250,000 net present value (\$350,000 total costs).

**VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN.**

Without established Points of Compliance and assurance that the restriction on groundwater use in the Block Placement Area remains in place until ICs are no longer necessary, continued protection of human health and the environment cannot be determined.

**VII. OUTSTANDING POLICY ISSUES**

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Conditions at the Site met the NCP criteria for removal set forth in 40 C.F.R. Section 300.415 (b) (2) and I recommend your approval of the proposed fund-lead Removal Action.

Approval: \_\_\_\_\_

Date: \_\_\_\_\_

Carol Campbell  
Acting Assistant Regional Administrator  
Office of Ecosystem Protection and Remediation

Disapproval: \_\_\_\_\_

Date: \_\_\_\_\_

Carol Campbell  
Acting Assistant Regional Administrator  
Office of Ecosystem Protection and Remediation

cc: Bill Muray, EPR-SR  
David Ostrander, EPR-SA  
Daryl Reed, MDEQ  
Bill Kirley, MDEQ  
Richard Sisk, ENF-L  
Rebecca Thomas, EPR-SR  
Kelcey Land, ENF-RC  
Dave Sturn, 8MO  
Chuck Sands, OSRTI, 5204G

Date

ROUTING AND TRANSMITTAL SLIP

TO: (Name, office symbol, room number, building, Agency/Post)	Initials	Date
1. Roger Hoogerheide (8MO)	RH	6/23
2. John Wardell (8MO)		6/23
3. Richard Sisk <sup>(8-ENF-L)</sup> (ECEJ-LEP)		7/10
4. Matt Cohn (ECEJ-LEP)	MC	7/10
5. Sharon Kercher (ECEJ-TEP)	SK	6/30
6. <del>Carol Campbell</del> <sup>Max Her</sup> (EPR) for signature	MM	7/11/08
7. Richard Sisk (ENF-L) will send back to Roger after copying		
8.		
9.		
10.		

<input type="checkbox"/> Action	<input type="checkbox"/> File	<input type="checkbox"/> Note and Return
<input type="checkbox"/> Approval	<input type="checkbox"/> For Clearance	<input type="checkbox"/> Per Conversation
<input type="checkbox"/> As Requested	<input type="checkbox"/> For Correction	<input type="checkbox"/> Prepare Reply
<input type="checkbox"/> Circulate	<input type="checkbox"/> For Your Information	<input type="checkbox"/> See Me
<input type="checkbox"/> Comment	<input type="checkbox"/> Investigate	<input type="checkbox"/> Signature
<input type="checkbox"/> Coordination	<input type="checkbox"/> Justify	

REMARKS

ENVIRONMENTAL  
PROTECTION AGENCY  
JUL 18 2008  
MONTANA OFFICE

Please make me  
a copy  
Carol C  
7/11/08

DO NOT use this form as a RECORD of approvals, concurrences, disposals, clearances, and similar actions

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