FORM 27 Rev 6/99

State of Colorado
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303) 894-2100 Fax 894-2109

FOR OGCC USE ONLY

1120987

REMED # 1666

OGCC Employee:

☑ Spill ☐ Complaint

☐ Inspection ☐ NOAV

Tracking No: 1120987

SITE INVESTIGATION AND REMEDIATION WORKPLAN

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. Form 27 is intended to be used whenever possible. Additional documentation will be required when large volumes of soil and groundwater have been impacted or involve large facilities with multiple source areas. See Rule 910. Attach as many pages as needed to fully describe the proposed work.

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

☒ Spill or Release ☐ Plug & Abandon ☐ Central Facility Closure ☐ Site/Facility Closure ☐ Other (describe):

GENERAL INFORMATION

OGCC Operator Number: 47120

Name of Operator: Kerr-McGee Rocky Mountain Corp.

Address: 1999 Broadway, Suite 3600

City: Denver State: CO Zip: 80202

Contact Name and Telephone

Paul Schneider

No: 720-264-2715

Fax: 303-296-1258

API/Facility No: 05-001-09112

Facility Name: Helix

Well Name: Helix

Location (QtrQtr, Sec, Twp, Rng, Meridian): NWNW, 30-T2S-R64W, 6th PM

County: Adams

Facility Number: #1

Well Number: #1

Latitude: Longitude:

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc.): Oil & produced water

Site Conditions: Is location within a sensitive area (according to Rule 901e)? ☒ Y ☐ N If yes, attach evaluation.

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): Pasture

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Sandy clay

Potential receptors (water wells within 1/4 mi, surface waters, etc.): groundwater 15 ft. bgs, residence 150 ft. west

Description of Impact (if previously provided, refer to that form or document):

Impacted Media (check):		Extent of Impact:	How Determined:
☒	Soils	See previous Form 19	
☐	Vegetation		
☒	Groundwater	Approx. 50 ft. downgradient	Laboratory analysis of groundwater samples
☐	Surface water		

REMEDIATION WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document):

See previous Form 19.

Describe how source is to be removed:

Impacted soils have been removed. A groundwater recovery culvert was installed on the east side of the treater. A vac truck is utilized to remove water (when present) from the recovery culvert.

Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.:

Excavated soils were transported to Kerr-McGee's land treatment facility. Impacted water removed from the recovery culvert is transported to a licensed injection facility.

Submit Page 2 with Page 1.

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REMEDIATION WORKPLAN (CONT.)

OGCC Employee:

Tracking Number:
Name of Operator: Kerr-McGee Rocky Mountain Corp.
OGCC Operator No: 47120
Received Date:
Well Name & No: Helix #1
Facility Name & No.: Helix #1

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):
Monitoring wells H-01 through H-03 were installed at the site in 3/02. Monitoring wells H-04 and H-05 were installed at the site (in 12/02) to address a revised groundwater flow direction estimate. The wells are sampled on a quarterly basis, and groundwater samples are submitted for laboratory BTEX analysis. Laboratory results will be evaluated to determine if there is a need for an additional monitoring well.

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing. Use additional sheet for description if required.
The site was restored to its pre-release grade. Kerr-McGee's production equipment remains onsite.

Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing.

Is further site investigation required? ☒ Y ☐ N If yes, describe:
Ongoing quarterly groundwater monitoring.

Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):
Excavated soils were transported to Kerr-McGee's centralized land treatment facility. Impacted groundwater removed from the recovery culvert is transported to a licensed injection facility.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began:	3/14/2002	Date Site Investigation Completed:	7/24/2002	Remediation Plan Submitted:	2/27/2003
Remediation Start Date:	3/19/2002	Anticipated Completion Date:	12/31/2004	Actual Completion Date:	

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: Paul D. Schneider

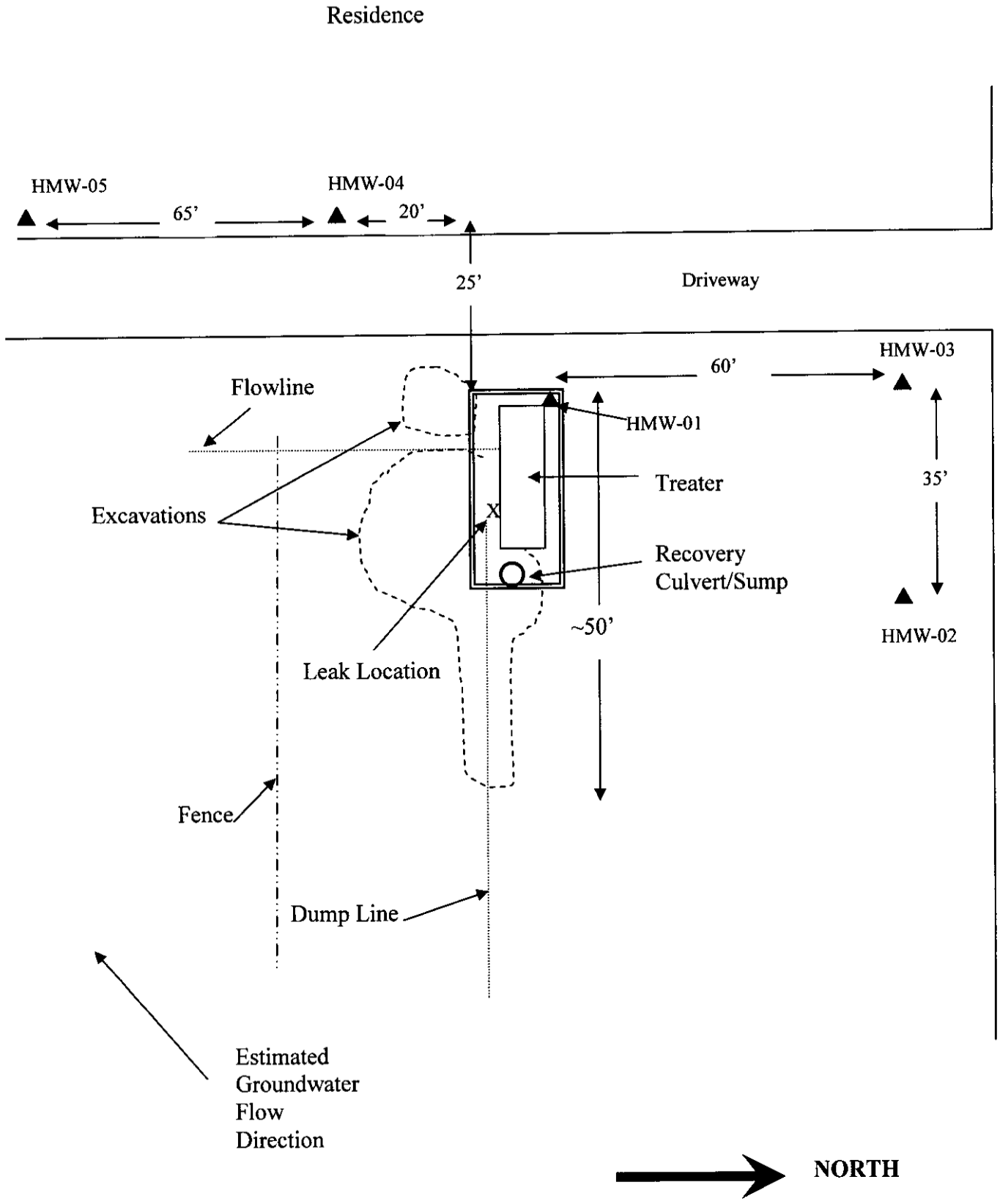
Signed: _____ Title: Environmental Coordinator Date: February 27, 2003

OGCC Approved: _____ Title: EPS Date: 3/7/03

2002 PROJECT SUMMARY

Helix #1 **Incident Date: 3/14/2002**

One groundwater recovery culvert was installed in the excavation in order to remove impacted groundwater. Three monitoring wells (H-01 through H-03) were installed at the site in March 2002. Wells HMW-04 and HMW-05 were installed in December 2002 to address a revised groundwater flow direction estimate. The Form 27 for the site is attached.



▲ = Monitoring Well Location

Figure – 1 **KERR MCGEE ROCKY MOUNTAIN CORP. – HELIX #1 Battery Site Diagram**

NWNW Sec30-T2S-R64W, Adams County, Colo

Revision Date: February 13, 2003 Revised by PDS

Scale is approximate.

GROUNDWATER ANALYSIS LABORATORY DATA SUMMARY HELIX #1					
WELL ID	SAMPLE DATE	BENZENE ug/L	TOLUENE ug/L	ETHYL BENZENE ug/L	XYLENES ug/L
H-01	4/4/02	ND	ND	ND	1.7
	7/24/02	8430	1660	ND	2480
	9/23/02	3260	390	85	900
(W.L. = 15.38' bgs)	1/7/03	1910	42	70	298
H-02	4/4/02	ND	ND	ND	ND
	7/24/02	ND	ND	ND	ND
	9/23/02	ND	ND	ND	ND
(W.L. = NA)	1/7/03	ND	ND	ND	ND
H-03	4/4/02	ND	ND	ND	ND
	7/24/02	ND	ND	ND	ND
	9/23/02	ND	ND	ND	ND
(W.L. = NA)	1/7/03	Not Sampled – Well Dry			
H-04 (W.L. = 14.27' bgs)	1/7/03	104	27	1.8	159
H-05 (W.L. = 14.45' bgs)	1/7/03	ND	ND	ND	ND
REPORTING LIMIT (RL)		1	1	1	1
STATE GROUND-WATER STANDARDS		5	1000	680	10000

NT = NOT TESTED NA = NOT AVAILABLE ND = NOT DETECTED ABOVE PQL

Laboratory RL listed is for undiluted samples. ug/L = micrograms per liter, NA = not able to measure water level