

State of Colorado  
**Oil and Gas Conservation Commission**

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



#7162

FOR OGCC USE ONLY

RECEIVED  
7/9/2012

**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): \_\_\_\_\_

OGCC Operator Number: _____	Contact Name and Telephone: _____
Name of Operator: _____	_____
Address: _____	No: _____
City: _____ State: _____ Zip: _____	Fax: _____
API Number: _____	County: _____
Facility Name: _____	Facility Number: _____
Well Name: _____	Well Number: _____
Location: (QtrQtr, Sec, Twp, Rng, Meridian): _____ Latitude: _____ Longitude: _____	

**TECHNICAL CONDITIONS**

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

**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.): \_\_\_\_\_

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

Potential receptors (water wells within 1/4 mi, surface waters, etc.): \_\_\_\_\_

\_\_\_\_\_

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

Impacted Media (check):	Extent of Impact:	How Determined:
Soils	_____	_____
Vegetation	_____	_____
Groundwater	_____	_____
Surface Water	_____	_____

**REMEDIALTION WORKPLAN**

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

\_\_\_\_\_

**Describe how source is to be removed:**

\_\_\_\_\_

**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.:**

\_\_\_\_\_



XTO

Tracking Number: \_\_\_\_\_  
Name of Operator: \_\_\_\_\_  
OGCC Operator No: \_\_\_\_\_  
Received Date: \_\_\_\_\_  
Well Name & No: PCU T45-186  
Facility Name & No: \_\_\_\_\_

Page 2

REMEDIAL WORKPLAN (Cont.)

OGCC Employee: \_\_\_\_\_

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):

Available information indicates that the uppermost groundwater bearing zone is greater than 200 feet below the ground surface. Soil samples were collected for laboratory analysis below the pit to confirm no groundwater impact potential exists (see Table 1).

**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 pit will be backfilled with clean fill material imported to the site.

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:

Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):

NA

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: <u>7/6/2011</u>	Date Site Investigation Completed: <u>7/3/2012</u>	Date Remediation Plan Submitted: <u>7/9/2012</u>
Remediation Start Date: <u>pending approval</u>	Anticipated Completion Date: <u>pending approval</u>	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: Jessica Dooling

Signed: \_\_\_\_\_

Title: Environmental Coordinator

Date: 7/9/2012

OGCC Approved: \_\_\_\_\_

Carly Bujin

Title: FOR

Date: 07/31/2012

Chris Camfield  
EPS NW Region

**TABLE 1**  
**PCU T45X-18G Former Buried Bunker Tank and Background Sampling Summary**

Analytical Parameter (with units)	Bottom of excavation samples (7/6/11)	BACKGROUND SAMPLES					COGCC  Table 910-1 Allowable Levels: (Soils Only)	Maximum Allowable Level (based on background)
		Background #1	Background #2	Background #3	Background #4	Background #5		
TPH (GRO) (mg/kg)	ND	-	-	-	-	-	-	-
TPH (DRO) (mg/kg)	54.90	-	-	-	-	-	-	-
TPH (GRO+DRO) (mg/kg)	54.90	-	-	-	-	-	500	-
Benzene (mg/kg)	ND	-	-	-	-	-	0.17	-
Toluene (mg/kg)	ND	-	-	-	-	-	85	-
Ethylbenzene (mg/kg)	ND	-	-	-	-	-	100	-
Xylenes (total) (mg/kg)	ND	-	-	-	-	-	175	-
Acenaphthene (mg/kg)	ND	-	-	-	-	-	1,000	-
Anthracene (mg/kg)	ND	-	-	-	-	-	1,000	-
Benzo(A)anthracene (mg/kg)	ND	-	-	-	-	-	0.22	-
Benzo(B)fluoranthene (mg/kg)	ND	-	-	-	-	-	0.22	-
Benzo(K)fluoranthene (mg/kg)	ND	-	-	-	-	-	2.2	-
Benzo(A)pyrene (mg/kg)	ND	-	-	-	-	-	0.022	-
Chrysene (mg/kg)	0.10	-	-	-	-	-	22	-
Dibenzo(A,H)anthracene (mg/kg)	ND	-	-	-	-	-	0.022	-
Fluoranthene (mg/kg)	0.16	-	-	-	-	-	1,000	-
Fluorene (mg/kg)	ND	-	-	-	-	-	1,000	-
Indeno(1,2,3,C,D)pyrene (mg/kg)	ND	-	-	-	-	-	0.22	-
Naphthalene (mg/kg)	ND	-	-	-	-	-	23	-
Pyrene (mg/kg)	0.14	-	-	-	-	-	1,000	-
Electrical Conductivity (mmhos/cm)	0.19	-	-	-	-	-	<40r 2X Bckgrnd	-
Sodium Adsorption Ratio (SAR)	1.3	-	-	-	-	-	<12	-
pH	9.27	-	-	-	-	-	6-9	-
Arsenic (mg/kg)	4.3	5	5.1	5.8	6.4	5.8	0.39	7.04
Barium (mg/kg)	227.0	-	-	-	-	-	15,000	-
Cadmium (mg/kg)	<1.2	-	-	-	-	-	70	-
Chromium (III) (mg/kg)	31.9	-	-	-	-	-	120,000	-
Chromium (VI) (mg/kg)	<0.45	-	-	-	-	-	23	-
Copper (mg/kg)	8.3	-	-	-	-	-	3,100	-
Lead (inorganic) (mg/kg)	18.0	-	-	-	-	-	400	-
Mercury (mg/kg)	<0.10	-	-	-	-	-	23	-
Nickel (mg/kg)	13.5	-	-	-	-	-	1,600	-
Selenium (mg/kg)	<5.8	-	-	-	-	-	390	-
Silver (mg/kg)	<3.5	-	-	-	-	-	390	-
Zinc (mg/kg)	49.1	-	-	-	-	-	23,000	-

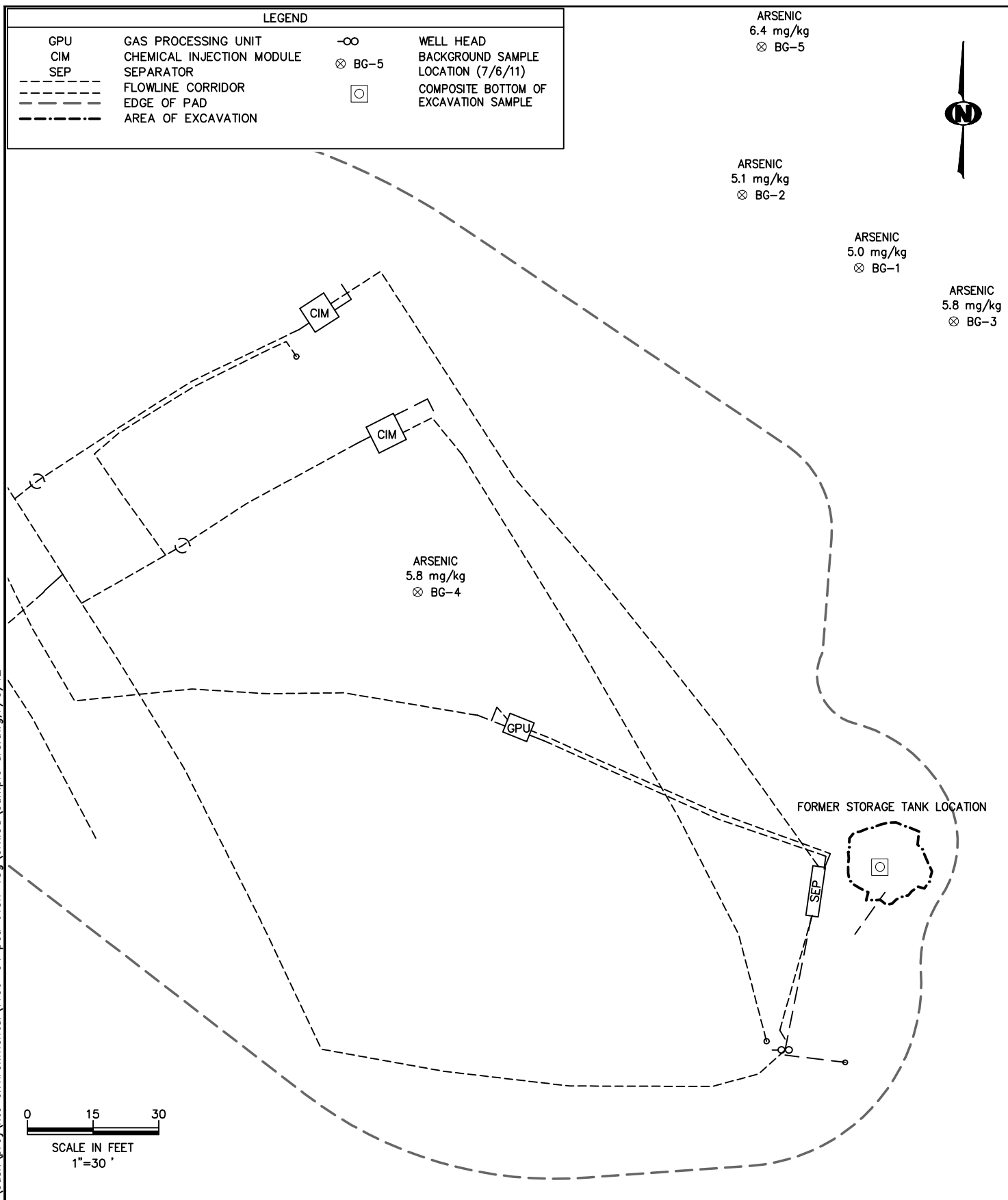
Notes:

1) ND = not detectable to the laboratory detection limit.

2) Results highlighted in yellow exceed Table 910-1 parameters. Results highlighted in gray exceed Table 910-1, but are below maximum allowable levels based on background.

3) "-" indicates no tests were performed.

\\hyper-v03\lkw-d-co\sdk\proj\cto environmental\1106-04 pcu t45x-18g\civil3d\sample ars.dwg,7/5/12



DESIGNED: DK	CHECKED: DK	FIGURE  1	NOTES:		<b>KRW CONSULTING, INC.</b> <b>8000 W. 14TH AVENUE, SUITE 200</b> <b>LAKEWOOD, COLORADO</b> <b>(303) 239-9011</b>	<b>FIGURE 1</b> <b>PICEANCE CREEK</b> <b>PCU T45X-18G</b> <b>SAMPLE LOCATIONS WITH</b> <b>ARSENIC LEVELS</b>  <b>PREPARED FOR XTO ENERGY</b>
DATE: 7/5/12	DRAWN: DRF					
FILE NAME: sample ars	SHEET NO. 1 of 1	DATE	REVISIONS			
PROJECT NO. 1106-04	SCALE: 1"= 30'					