

State of Colorado
Oil and Gas Conservation Commission



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#8168

FOR OGCC USE ONLY

RECEIVED
1/8/2014

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.

OGCC Employee:

Spill Complaint
 Inspection NOAV

Tracking No: 2145907

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

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

OGCC Operator Number: <u>10447</u>	Contact Name and Telephone: <u>Robert Bleil</u>
Name of Operator: <u>Ursa Operating Company, LLC</u>	No: <u>970-625-9922</u>
Address: <u>792 Buckhorn Dr.</u>	Fax: <u>970-625-9929</u>
City: <u>Rifle</u> State: <u>CO</u> Zip: <u>81650</u>	

API Number: <u>05-045-15166</u>	County: <u>Garfield</u>
Facility Name: <u>Norcross A</u>	Facility Number: <u>335544</u>
Well Name: <u>Norcross A</u>	Well Number: <u>N/A</u>
Location: (QtrQtr, Sec, Twp, Rng, Meridian): <u>NESW, Sec 13, T6S, R93W</u> Latitude: <u>39.522941</u> Longitude: <u>-107.728929</u>	

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Produced Water/Condensate

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.): Rangeland, Non-Crop Land, County Airport

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Ildefonso Stony Loam, 25 to 45 percent slopes

Potential receptors (water wells within 1/4 mi, surface waters, etc.): Water well located approximately 1,950 feet to northeast. Dry Creek located approximately 809 feet to southwest.

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

Impacted Media (check):	Extent of Impact:	How Determined:
<input checked="" type="checkbox"/> Soils	<u>Unknown until soil borings can be completed</u>	<u>Visual/Field Instruments</u>
<input type="checkbox"/> Vegetation	_____	_____
<input type="checkbox"/> Groundwater	_____	_____
<input type="checkbox"/> Surface Water	_____	_____

REMEDIATION WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document):
See attached for details.

Describe how source is to be removed:
See attached for details.

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.:
See attached for details.



Tracking Number: _____
Name of Operator: _____
OGCC Operator No: _____
Received Date: _____
Well Name & No: _____
Facility Name & No: _____

REMEDIATION WORKPLAN (Cont.)

OGCC Employee: _____

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

See attached for details.

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.

See attached for details.

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:

See attached for details.

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

See attached for details.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: Feb 2014 Date Site Investigation Completed: Feb 2014 Date Remediation Plan Submitted: TBD
Remediation Start Date: TBD Anticipated Completion Date: TBD Actual Completion Date: TBD

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

Print Name: Kris Rowe Signed: Date: 1/8/2013
Title: Environmental Consultant for Ursa Operating Company

OGCC Approved: _____ Title: _____ Date: _____

FORM 27 ATTACHMENT:

Describe initial action taken:

- Upon the completion of remediation regarding Form 19 submitted 8/23/13, Spill Tracking #2145907, historical impacts were discovered surrounding the secondary lined-steel containment. Visual observation revealed hydrocarbon staining in the surrounding area outside of the containment suggesting that the liner may be faulty. Carlos Lujan (COGCC) advised on October 10, 2013 that a Form 27 be submitted to investigate the historical impacts encountered.
- In order to define the extent of this release, ten (10) proposed boreholes will be advanced to a depth of ten (10) feet, or to the point of terminus where no impacts are encountered. Borehole locations are outlined in Attachment B. The following equipment will be used to field screen the soil samples.
 - a PetroFlag unit,
 - a photoionization gas detector (PID),
- In accordance with Rule 905.b.(4), confirmation sample(s) will be collected from split spoon sampling equipment at two (2) foot intervals and field screened. Samples with the highest PID reading will be submitted for lab analysis and verification to confirm compliance with Rule 910 and Table 910-1.
- All field screening activities and results will be documented and compiled into a summary report, table and/or map to be provided with the No Further Action (NFA) Request.
- During the drilling process, and if impacts are discovered to depths encountering groundwater, temporary piezometers will be installed so that groundwater samples may be collected for Table 910-1 analysis. However, due to the topography and location of the site, groundwater is not expected to be encountered.
- A visual assessment will be performed throughout the entire investigation process and will be adequately documented (e.g. field notes, observations, photographs, etc.) by qualified personnel.

Describe how source is to be removed:

The magnitude of this impact has not been determined at this point. Should significant contamination be discovered, the following actions will be taken:

- Any historical spill or release will be reported via a Form 19 and in accordance with Rule 906 and remediation shall be performed in accordance with requirements specified in Rules 909 and 910.
- Notification and consultation with the affected surface owner(s) shall be made with good faith effort and in accordance with Rule 906.c.
- Should a release be identified and attributed to the contents outside the containment, the impacted area will be:

- excavated in which field screen instruments will guide the excavation and laboratory confirmation samples collected to demonstrate compliance with Table 910-1 of the COGCC 900-series rule; and
- placed within a lined and bermed containment cell pending remediation or disposal option described below.
- All excavated contents will be evacuated and managed in accordance with all applicable local, state [i.e. Rule 905.b.(2)] and federal regulations. If disposal is required, the relevant media will be disposed of at a properly permitted and approved facility.
- If it is determined that excavation cannot occur due to space constraints or limitations due to the pad and or equipment. In-situ bioremediation will be evaluated and possibly proposed. A detailed bioremediation workplan will be submitted for approval prior to work commencing.
- The potential source – leaking equipment and faulty containment liner - will be properly repaired and/or replaced in accordance with the COGCC 900 and 1000 series rules, respectively.

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, in-situ bioremediation, burning of oily vegetation, etc.:

The magnitude of this impact has not been determined at this point. Should significant contamination be discovered, the following actions will be taken:

- Any area(s) determined to be impacted/contaminated will be excavated or treated in-situ and managed in accordance with all applicable rules and regulations regarding solid waste and treatment, including applicable portion of COGCC Rule 907.
- Field screen equipment will be used to guide the remediation efforts, to ensure compliance with Table 910-1 of the COGCC 900 series rule.
- Any excavated material will be placed within a lined and bermed containment cell pending the following options. Remediation and disposal options may include:
 - on-site landfarming/bioremediation,
 - in-situ remediation,
 - and/or disposal at an approved waste, management facility; as consistent with Rule 907.
- Disposal of impacted media will occur at an approved waste facility (i.e. Garfield County Landfill, ECDC Environmental) further defined in the “Final disposition of E&P waste” below.
- Final disposition will be dependent upon identified contaminants, contaminant concentration, land availability, landowner approval and waste volume.

If groundwater has been impacted, describe proposed monitoring plan:

- The presence of impact has not been determined at this point. No impacts have been observed to date or any other indication that would suggest there has been an event that would result in impact to the surrounding environment. Based on the topographical

setting of the facility and the depth to groundwater, noted in the nearest well, it is not anticipated groundwater has been impacted by this release. However, should it be observed or determined that groundwater impacts exist, an appropriate site specific monitoring and remediation plan will be developed and submitted for approval.

- The monitoring and remediation plan will be developed to include, but is not limited to,
 - number of sample wells and/or points;
 - proposed location of sample wells and/or points;
 - sampling schedule;
 - analytical methods including analyte list(s);
 - monitoring scheme including end point; and
 - potential mitigation or remediation approaches if necessary [Rule 910 (4) E].

Describe reclamation plan:

- The remediated area will be reclaimed to the present grade of the location or to the approximate original contour of the landscape and consistent with the 1000-series Rule.
- Seeding of the disturbed area will be performed in accordance with its' intended use. The seed mix will be prescribed by the landowner.
- As a preventative measure, Ursa may seed disturbed areas as soon as practicable with temporary or sterile annual seed mixes to:
 - provide soil stability, and
 - serve as a nurse or cover crop for desired species; derived from the natural seed bank and/or the applied seed mix.

Attach samples and analytical results taken to verify remediation of impacts. Show location of samples on an onsite schematic or drawing. Is further site investigation required?:

- The presence of impact has not been determined at this point; therefore, the need for further site investigation has not been determined at this time.
- A determination of whether further site investigation is required and is pending field assessments and screening, which are to be confirmed by analytical results from an accredited - NELAP - laboratory (ALS Group Laboratory).

Final disposition of E&P waste:

- If the stockpiled volume is small enough to manage on-site, there is available area on location, concentrations are within a reasonable range to be remediated in a timely manner, and the identified contaminants are conducive to bioremediation, landfarming or in-situ remediation may occur as approved and in accordance with Rule 907.
- Should the aforementioned attributes not exist or the concentrations are not conducive to bioremediation, then off-site disposal will be the final disposition of all impacted materials.
- If the latter option is taken, disposal will occur at an approved treatment, storage or disposal facility (TSD) which may include, but is not limited to, the following facilities:

Facility Name: Norcross A
Facility ID # 335544

Name of Operator: Ursa Operating Company, LLC
Latitude: 39.522941 Longitude: -107.728929

COGCC Operator # 10447
County: Garfield

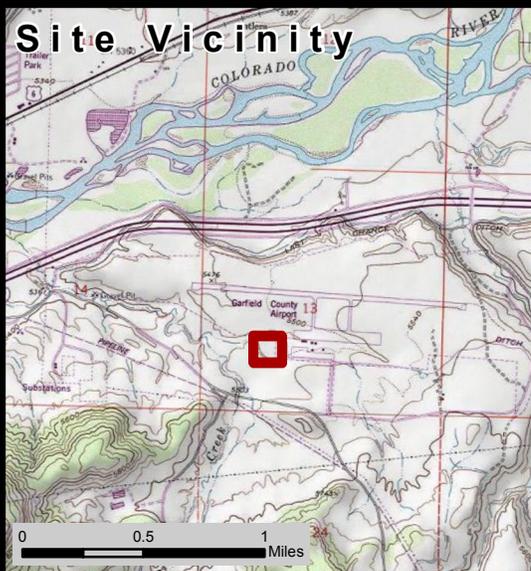
Location (QtrQtr, Sec, Twp, Rng, Meridian): NESW, Sec 13, T6S, R93W, 6 PM

- the West Garfield County Landfill (045-LFL-005; Parachute, CO); or ECDC Environmental, LLC
- Any soils requiring treatment that, once treated, fall below the allowable concentrations and levels provided in Table 910-1 may be recycled and reused on-site as fill material.

Rem # _____
OGCC # _____



T6S R93W
Section 13



Notes / Comments:



Site Investigation & Remediation Workplan

Norcross A
39.52273 -107.72833

 Proposed Drilling Locations

 Secondary Containment

0 50 100 Feet



HRI COMPLIANCE SOLUTIONS, INC.

Author: M Spinelli

Revision: 0

Date: 1/2/2014

Sensitive Area Determination Checklist

Ursa Operating Company, LLC (Ursa)		
Person(s) Conducting Inspection	Alexander Nees	01/02/14
	<i>Environmental Scientist</i>	
Site Information		
Location:	Norcross A Pad	Time: 930
Type of Facility:	Existing well pad	
Environmental Conditions	Desktop review	
Temperature (°F)	N/A	

Has the proposed, new or existing location been designated as a sensitive area?

Yes No

SURFACE WATER

1. Are there any surface water features or SWSAs adjacent to or within ¼ mile of the proposed/new or existing facility?

Yes No

If yes, list type of surface water feature(s), i.e. rivers, creeks, streams, seeps, springs, wetlands: One (1) unnamed USGS identified intermittent drainage and Dry Creek, a USGS identified intermittent stream.

If yes, describe location relative to facility: One (1) unnamed USGS identified intermittent drainage is located 297' to the north; Dry Creek is located approximately 805' to the southwest of the existing facility

2. Could a potential release from the facility reach surface water features?

Yes No

If yes, describe the pathway a release from the facility would likely follow to determine if the potential to impact surface water is high or low. If a potential release were to migrate off the facility, flow would follow the natural topography northwest towards the unnamed USGS identified intermittent drainage. Flow would likely be diverted around the location's perimeter berm, but this would not alter the general northwest direction of flow where surface water features would be affected.

3. Is the potential to impact surface water from a facility release high or low?

High Low

GROUNDWATER

1. Will the proposed/new or existing facility have any pits which will contain hydrocarbons and chlorides or other E&P wastes?
 Yes No
If yes, List the pit type(s):

2. Is the site of the proposed facility underlain by an unconfined aquifer or recharge zone?
 Yes No

3. Is the hydraulic conductivity of the underlying soil or geologic material $\leq 1.0 \times 10^{-7}$ cm/sec?
 Yes No

4. Is the proposed facility located within 1/8 mile of a domestic water well or 1/4 mile of a public water supply well which would use the same aquifer?
 Yes No

5. Is the proposed facility located within a 100 year floodplain?
 Yes (*Sensitive Area*) No (*If no, proceed to question #6.*)

6. Is the depth to groundwater known?
 Yes (*If yes, follow instructions provided in 6(a) of this section.*)
 No (*If no, follow instructions provided in 6(b) of this section.*)
 - (a) If yes, could a potential release from the proposed facility reach groundwater?
 Yes No
If yes, explain:

 - (b) If no:
 - (i) Evaluate surrounding soils, topography, and vegetation which may suggest the presence of shallow groundwater.
 - (ii) Gather information from surrounding well data in order to determine a depth to groundwater, i.e. State Engineers Office.

7. Is the potential to impact ground water from the facility in the event of a release high or low?
 High Low

Additional Comments:

As stated in the surface water portion of this sensitive area determination, one (1) unnamed USGS identified intermittent drainage and Dry Creek, a USGS identified intermittent drainage, are both within a ¼ mile of the existing facility. The facility, as it is currently constructed, includes an earthen perimeter berm that limits the point of a potential release to the access road in the southwestern corner of the pad. If a potential release was to migrate off the southwestern edge of the pad via the access road, flow would then migrate to the northwest and enter the channel of the unnamed USGS identified intermittent drainage after approximately 400' of cross-surface travel along the outer edge of the perimeter berm. The confluence with Dry Creek is reached approximately 1,235' downstream from the point at which a potential release would enter the unnamed USGS identified drainage. Intervening elevated topography prevents a surface release from entering Dry Creek directly by cross-country travel to the southwest from the facility. The unnamed USGS identified drainage has been observed to flow during past site visits, and there exists a potential for impacts to occur to surface waters in this drainage from a release at the pad location.

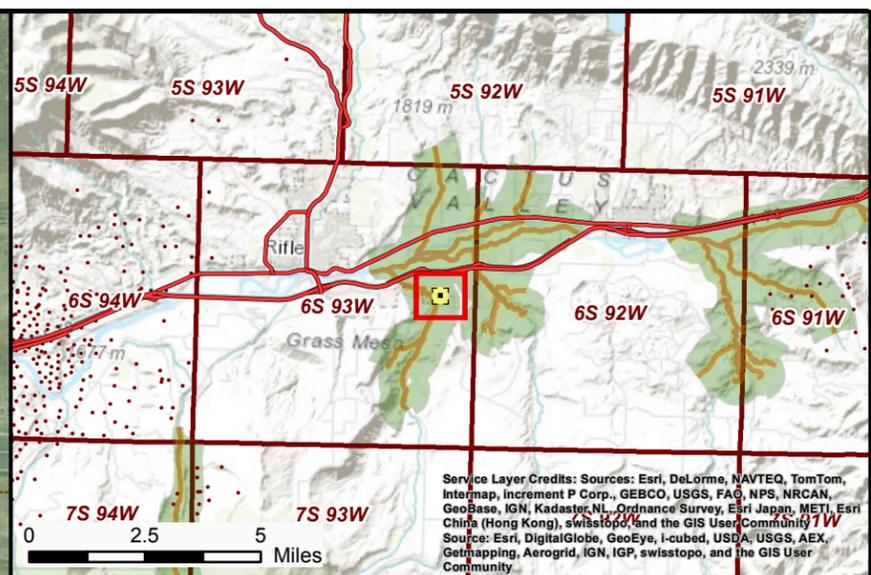
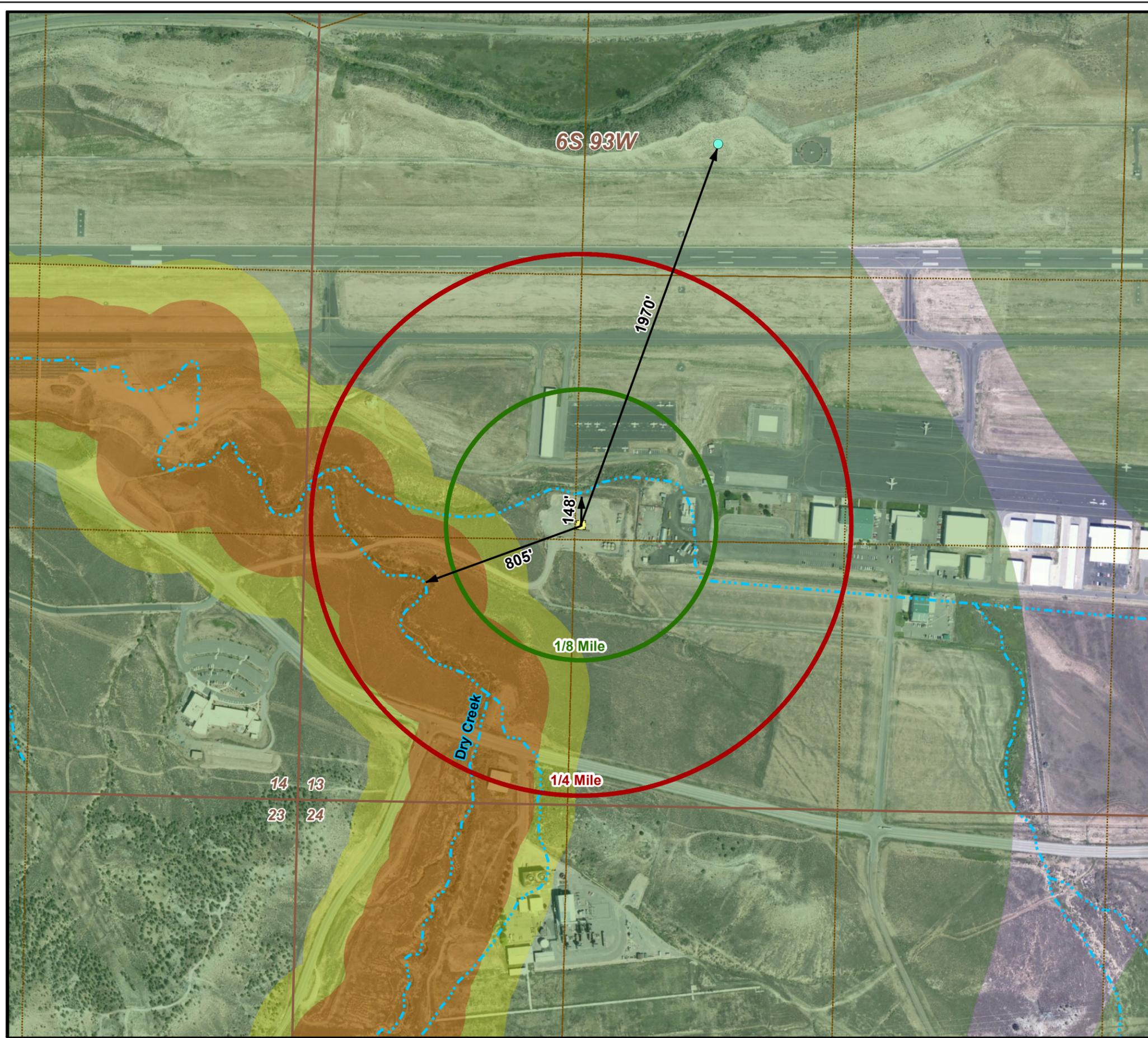
The State Engineer's Office and USGS records were reviewed and revealed one (1) water well (permit number 3368-F) located 2,188' north of the proposed facility. The depth to groundwater is noted to be 18'. However, the existing well is approximately 115 feet lower in elevation than that of the existing facility. Therefore it could be assumed that the depth to groundwater would be at least 100 feet if not greater in the immediate vicinity of the existing facility. The topography of the area is sloping gently to the north and is dominated by mid-elevation xeric vegetation (sagebrush shrublands with isolated rabbit brush and sparse bunch grass coverage dominated by western wheat grass). The channel of the unnamed USGS identified intermittent drainage displayed similar vegetation, with a greater proportion of rabbit brush and occasional juniper trees indicating somewhat greater water availability. There are no indications of seeps, springs, or hydrophilic vegetation that would suggest the presence of shallow groundwater.

Based on the information collected during the desktop review, the potential to impact groundwater has been deemed as being low as noted above. The greatest potential for impacts would be to the unnamed USGS identified intermittent drainages located 297 feet to the north of the proposed facility. By COGCC decision the close proximity of this drainage would classify the proposed facility as being in a sensitive area. In addition, the facility is located within the external buffer zone of the City of Rifle Surface Water Supply Area (SWSA). As per COGCC rule 317B, oil and gas facilities and operations within a SWSA are considered sensitive. Therefore, by rule, the facility should be designated as being in a sensitive area.



Date: 01/02/2014

Alexander Nees, *Environmental Scientist*
HRL Compliance Solutions, Inc.



Comments:



Sensitive Area Determination Norcross A

39.522992 -107.728835

Well Pad	Water Well
Pad Footprint	Perennial Stream
Highways	Intermittent Stream
County Road	Ditch
Internal Buffer (300')	Pond
Intermediate Buffer (500')	PLSS
1/2 Mile Stream Buffer	Township & Range
	Section
	QtrSection

0 500 1,000 Feet Scale 1 : 6,000