



SUNDRY NOTICE

Submit original plus one copy. This form is to be used for general, technical and environmental sundry information. For proposed or completed operations, describe in full on Technical Information Page (Page 2 of this form.) Identify well or other facility by API Number or by OGCC Facility ID. Operator shall send an informational copy of all sundry notices for wells located in High Density Areas to the Local Government Designee (Rule 603b.)

Form with fields for 1. OGCC Operator Number, 2. Name of Operator, 3. Address, 4. Contact Name, 5. API Number, 6. Well/Facility Name, 7. Well/Facility Number, 8. Location, 9. County, 10. Field Name, 11. Federal, Indian or State Lease Number, and a table for Survey Plat.

General Notice

General Notice section with checkboxes for CHANGE OF LOCATION, CHANGE SPACING UNIT, CHANGE OF OPERATOR, ABANDONED LOCATION, SPUD DATE, and RECLAMATION.

Technical Engineering/Environmental Notice

Technical Engineering/Environmental Notice section with checkboxes for Notice of Intent, Report of Work Done, and various technical options.

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

Signed: Sean T. Norris Date: 8/20/2010 Email: sean_norris@oxy.com Print Name: Sean T. Norris Title: Regulatory Lead

COGCC Approved: Alex Fischer Title: FOR Date: 02/07/2013

CONDITIONS OF APPROVAL IF ANY:

Hand Treatment Plan

Alex Fischer Supervisor Western Region

TECHNICAL INFORMATION PAGE



FOR OGCC USE ONLY

1. OGCC Operator Number: <u>66561</u>	API Number: <u>05-077-08402</u>
2. Name of Operator: <u>OXY USA Inc.</u>	OGCC Facility ID # <u>311745</u>
3. Well/Facility Name: <u>Colorado Land</u>	Well/Facility Number: <u>#1</u>
4. Location (QtrQtr, Sec, Twp, Rng, Meridian): <u>SWNW 17 10S 94W 6 PM</u>	

This form is to be completed whenever a Sundry Notice is submitted requiring detailed report of work to be performed or completed. This form shall be transmitted within 30 days of work completed as a "subsequent" report and must accompany Form 4, page 1.

5. **DESCRIBE PROPOSED OR COMPLETED OPERATIONS**

See attached

Land Treatment Plan of E&P Hydrocarbon Wastes
Remediation #5132

Land Treatment Plan of E&P Hydrocarbon Wastes Remediation #5132

08/19/2010

1.0 Location:

OXY USA Inc.
760 Horizon Dr., Ste. 101
Grand Junction, CO 81506

LL&CC 17-5
T0S, R94W, S17, SWNW
Mesa County, Colorado

2.0 Overview:

Oxy verbally notified the COGCC on 07/13/10 of potential release into Grove Creek that occurred adjacent to the LL&CC 17-5 pad and followed up with a Form 19 and Form 27 on 07/21/10. Per that report, Oxy stated that we would treat the impacted soil on site. A July 23, 2010 email from Linda Sprye O'Rourke requested the following information:

Please submit a Waste Management Plan, via a Sundry Form 4 for the landfarming portion of this workplan.

Rule 907.a.(3) allows for an operator to submit, via Form 4, or via a Form 27, a written plan for managing E&P waste. I do not see such a plan accompanying the Form 27 for this site.

At a minimum, the waste management plan must describe

- *the type of waste,
- *TPH and BTEX and other analyte levels at the beginning (initial sampling results),
- *analytical suite proposed or used to characterize the waste prior to treatment (same analytical suite would be used to confirm endpoint of treatment)
- *treatment method proposed including specific additives and all QA/QC protocols,
- *irrigation, watering and cultivation schedule,
- *sampling schedule to be used to demonstrate remediation progress,
- *proposed use of the waste following treatment,
- *where the impacted soils/cuttings are coming from (specific wells or pits),

*the location proposed for the land farm,

*ownership or leasing information for both the source location and the receiving location.

Oxy's initial investigation activities included digging several bell holes between the pad and Grove Creek. Spoils that were determined to be impacted by hydrocarbons were placed on a liner within an earthen berm at the North end of the LL&CC 17-5 pad. Oxy estimates that approximately ~1250 cu. yds. of material was generated by assessment and mitigation excavations.

Both the source location and receiving location is owned by OXY USA Inc.

Land treatment, also known as landfarming, is a method of treating petroleum impacted soils by allowing the naturally occurring bacteria to bioremediate the soil. The method typically requires spreading the soil, adding nitrogen and phosphorus, adding moisture, and mixing the soil for aeration.

3.0 Bioremediation:

The soil is to be initially mixed, evenly spread over a liner contained within an earthen berm, watered, and supplemented with Nitrogen (N) and phosphorus (P) per the manufacturers specifications in September 2010. The landfarm will be located on the LL&CC 17-5 pad to the north and east of the well heads as necessary to achieve an overall soil height of 6" to 24". The soil will be mixed and watered again in October 2010.

The soil will be re-fertilized in May in each of the following years. Furthermore, the soil mixing and watering activities will resume on a monthly basis from May to October of the subsequent years until laboratory results are at or below the COGCC Table 910.1 standards.

Mixing and watering will not be conducted during the winter months (November through April) due to the low temperatures at which the microbes will not be growing as well as ground freezing.

Oxy's Stormwater Management Plan (SWMP) will be updated to reflect the changes to the pad. Oxy will ensure stormwater is adequately managed and ensure treatment leachate is controlled.

4.0 Sampling Plan:

On 08/17/10, two (2) composite (characterization) samples of the impacted soil were collected and analyzed for BTEX, TPH (GRO and DRO), EC, SAR, pH, and As. Additionally, three (3) background samples were collected and are being analyzed for SAR, EC, pH, and As. Oxy has not received the analytical results at this time. The analytical results will be evaluated for the need of landfarming activities relative to the allowable Table 910-1 concentrations. If landfarming activities are deemed necessary, the following sampling schedule will be followed.

Within 30 days of the initial mixing, watering, fertilizing, etc., Oxy will collect two composite samples from the treatment area and analyze for BTEX, TPH, EC, SAR, and pH. Oxy will follow up additional sampling events at three (3) month intervals thereafter from May through November. At any time BTEX, TPH, EC, SAR, and pH are in compliance with the COGCC Table 910-1 standards, OXY will immediately follow up with verification samples to include all of the 910-1 constituents for determination of 'site clearance'.

Where desired treatment results are not being achieved, Oxy may further elect to analyze the soil for percent moisture, microbial plate counts, etc., and amend the plan as necessary.

At the time analyticals reflect 'site clearance', Oxy will re-contour the cut slope (east) with the soil and seed for re-vegetation and erosion control. Oxy may elect to use the material for other operational activities.

5.0 References:

How To Evaluate Alternative Cleanup Technologies For Underground Storage Tank Sites: A Guide For Corrective Action Plan Reviewers (EPA 510-B-94-003; EPA 510-B-95-007; and EPA 510-R-04-002), Chapter 5: Landfarming. <http://www.epa.gov/swrust1/cat/LANDFARM.HTM>