Form C-144 Revised June 6, 2013

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources
Department
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

For temporary pits, below-grade tanks, and multi-well fluid management pits, submit to the appropriate NMOCD District Office.

For permanent pits submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

12561	Pit, Below-Grade Tank, or	OCD Received
39-23247	Proposed Alternative Method Permit or Closure Plan Application	1-15-15
33-23241	Type of action: Below grade tank registration Permit of a pit or proposed alternative method Closure of a pit, below-grade tank, or proposed alternative method Modification to an existing permit/or registration Closure plan only submitted for an existing permitted or non-permitted pit, bel or proposed alternative method	ow-grade tank,
	Instructions: Please submit one application (Form C-144) per individual pit, below-grade tank or alternative that approval of this request does not relieve the operator of liability should operations result in pollution of surface water approval of this request does not relieve the operator of liability should operations result in pollution of surface water applicable governmental authority's rule.	er, ground water or the
environment. Nor	that approval of this request does not relieve the operator of hability should operations result in pollution of states when the does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rule does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rule does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rule does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rule does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rule does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rule does approval relieve the operator of its responsibility to comply with any other applicable governmental authority is rule applicable.	es, regulations or ordinances.
Operator: Con	ocoPhillips Company OGRID #: 217817	
Address:	PO BOX 4289, Farmington, NM 87499	
Facility or well	name: Lindrith B Unit 25	<u></u>
API Number	30-039-23247 OCD Permit Number:	
U/L or Otr/Otr	O (SWSE) Section 9 Township 24N Range 3W County: Rio Arriba	
Center of Propo	osed Design: Latitude <u>36.32112800 •N</u> Longitude <u>-107.15872000 •W</u> NAD: 🛛 1927 🔲 19	083
Surface Owner	: Federal State Private Tribal Trust or Indian Allotment	
Permanent Lined String-Reir	□ Drilling □ Workover □ Emergency □ Cavitation □ P&A □ Multi-Well Fluid Management Low Chloride Drilling Fluid Management Unlined Liner type: Thickness mil □ LLDPE □ HDPE □ PVC □ Other	6
Liner Seams:		
Volume:	Constituents Exceed Star by 19.15.17.13 NMAC. Plants of fluid: 120	ease submit a
☐ Secondary	y containment with leak detection 🛛 Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off	
☐ Visible si	dewalls and liner Visible sidewalls only Other	
Liner type: T	hickness 45 mil HDPE PVC Other LLDPE	
4. Alternative Submittal of a	ve Method: an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for the Santa Fe Environmental Bureau	consideration of approval.
☐ Chain link institution or ☐ Four foot	bsection D of 19.15.17.11 NMAC (Applies to permanent pits, temporary pits, and below-grade tanks) c, six feet in height, two strands of barbed wire at top (Required if located within 1000 feet of a permanent resident church) height, four strands of barbed wire evenly spaced between one and four feet Please specify	nce, school, hospital,

Netting: Subsection E of 19.15.17.11 NMAC (Applies to permanent pits and permanent open top tanks)	
Screen Netting Other	
Monthly inspections (If netting or screening is not physically feasible)	
Signs: Subsection C of 19.15.17.11 NMAC 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers Signed in compliance with 19.15.16.8 NMAC	
Variances and Exceptions: Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance. Please check a box if one or more of the following is requested, if not leave blank: Variance(s): Requests must be submitted to the appropriate division district for consideration of approval. Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.	
9. Siting Criteria (regarding permitting): 19.15.17.10 NMAC Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of accept material are provided below. Siting criteria does not apply to drying pads or above-grade tanks.	able source
General siting	
Ground water is less than 25 feet below the bottom of a low chloride temporary pit or below-grade tank. - □ NM Office of the State Engineer - iWATERS database search; □ USGS; ☑ Data obtained from nearby wells	☐ Yes ☒ No ☐ NA
Ground water is less than 50 feet below the bottom of a Temporary pit, permanent pit, or Multi-Well Fluid Management pit. NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☑ NA
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. (Does not apply to below grade tanks) - Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☐ No
Within the area overlying a subsurface mine. (Does not apply to below grade tanks) - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ☐ No
Within an unstable area. (Does not apply to below grade tanks) - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	☐ Yes ☐ No
Within a 100-year floodplain. (Does not apply to below grade tanks) - FEMA map	Yes No
Below Grade Tanks	
Within 100 feet of a continuously flowing watercourse, significant watercourse, lake bed, sinkhole, wetland or playa lake (measured from the ordinary high-water mark).	☐ Yes ☒ No
- Topographic map; Visual inspection (certification) of the proposed site Within 200 horizontal feet of a spring or a fresh water well used for public or livestock consumption; NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes ⊠ No
Temporary Pit using Low Chloride Drilling Fluid (maximum chloride content 15,000 mg/liter)	
Within 100 feet of a continuously flowing watercourse, or any other significant watercourse or within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). (Applies to low chloride temporary pits.) - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 300 feet from a occupied permanent residence, school, hospital, institution, or church in existence at the time of initial application.	Yes No
- Visual inspection (certification) of the proposed site; Aerial photo; Satellite linage	
Within 200 horizontal feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or 300feet of any other fresh water well or spring, in existence at the time of the initial application. NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes ☐ No

	í l
Within 100 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Temporary Pit Non-low chloride drilling fluid	
Within 300 feet of a continuously flowing watercourse, or any other significant watercourse, or within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No
Within 500 horizontal feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or 1000 feet of any other fresh water well or spring, in the existence at the time of the initial application; - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 300 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Permanent Pit or Multi-Well Fluid Management Pit	
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No
Within 500 horizontal feet of a spring or a fresh water well used for domestic or stock watering purposes, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist: Subsection B of 19.15.17.9 Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the attached. Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.17 Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC Design Plan - based upon the appropriate requirements of 19.15.17.12 NMAC Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 1 and 19.15.17.13 NMAC Previously Approved Design (attach copy of design) API Number: or Permit Number:	9.15.17.9 NMAC
Multi-Well Fluid Management Pit Checklist: Subsection B of 19.15.17.9 NMAC Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the attached. Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC A List of wells with approved application for permit to drill associated with the pit. Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of and 19.15.17.13 NMAC Hydrogeologic Data - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC	19.15.17.9 NMAC
☐ Previously Approved Design (attach copy of design) API Number: or Permit Number:	

2. Permanent Pits Permit Application Checklist: Subsection B of 19.15.17.9 NMAC Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the do	ocuments are
 attached. Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17.9 NMAC Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC 	
☐ Climatological Factors Assessment ☐ Certified Engineering Design Plans - based upon the appropriate requirements of 19.15.17.11 NMAC ☐ Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19.15.17.11 NMAC ☐ Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC ☐ Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15.17.11 NMAC	
Quality Control/Quality Assurance Construction and Installation Plan Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC Nuisance or Hazardous Odors, including H ₂ S, Prevention Plan	
Emergency Response Plan Oil Field Waste Stream Characterization	
 ☐ Monitoring and Inspection Plan ☐ Erosion Control Plan ☐ Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC 	
13	
Proposed Closure: 19.15.17.13 NMAC Instructions: Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan.	: 1 N (Dit
Type: Drilling Workover Emergency Cavitation P&A Permanent Pit Below-grade Tank Multi-well Fl	uid Management Pit
Proposed Closure Method: Waste Excavation and Removal Waste Removal (Closed-loop systems only)	
On-site Closure Method (Only for temporary pits and closed-loop systems) In-place Burial On-site Trench Burial	
Alternative Closure Method	
14. Waste Excavation and Removal Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the following items must be closure plan. Please indicate, by a check mark in the box, that the documents are attached. □ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC □ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.13 NMAC □ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings) □ Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC □ Re-vegetation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC	
15.	
Siting Criteria (regarding on-site closure methods only): 19.15.17.10 NMAC Siting Criteria (regarding on-site closure methods only): 19.15.17.10 NMAC Instructions: Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable sou provided below. Requests regarding changes to certain siting criteria require justifications and/or demonstrations of equivalency. In 19.15.17.10 NMAC for guidance.	rce material are Please refer to
Ground water is less than 25 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	Yes No
Ground water is between 25-50 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	Yes No
Ground water is more than 100 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	Yes No
Within 100 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	Yes No
Within 300 horizontal feet of a private, domestic fresh water well or spring used for domestic or stock watering purposes, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site	Yes No
Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☐ No
Within 300 feet of a wetland. US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance	

-		
	pursuant to NMSA 1978, Section 3-27-3, as amended. Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☐ No
Within -	the area overlying a subsurface mine. Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ☐ No
Within -	an unstable area. Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	☐ Yes ☐ No
Within	a 100-year floodplain. FEMA map	☐ Yes ☐ No
by a cl	e Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the following items must be attached to the closure placek mark in the box, that the documents are attached. Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection E of 19.15.17.13 NMAC Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of Subsection K of 19.15.17 Construction/Design Plan of Temporary Pit (for in-place burial of a drying pad) - based upon the appropriate requirements of 19.15.17.13 NMAC Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of 19.15.17.13 NMAC Waste Material Sampling Plan - based upon the appropriate requirements of 19.15.17.13 NMAC Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards can Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC Re-vegetation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC	.11 NMAC .15.17.11 NMAC
I here	tor Application Certification: by certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and be (Print): Title:	blief.
	(Timo).	
o.	ture: Date:	
	address: Telephone:	
e-mai	address: Telephone: Approval: Permit Application (including closure plan) Closure Plan (only) OCD Conditions (see attachment) S	ee front page
e-mai	address: Telephone: Approval: Permit Application (including closure plan) Closure Plan (only) OCD Conditions (see attachment) S	ee front page
e-mai	address: Telephone: Approval: Permit Application (including closure plan) Closure Plan (only) COCD Conditions (see attachment) S	ee front page
e-mai	address: Telephone: Approval: Permit Application (including closure plan) Closure Plan (only) OCD Conditions (see attachment) S	ee front page 29, 2015 ng the closure report.
e-mai 18. OCD OCD Title 19. Closs Instr The section 20. Closs	Approval: Permit Application (including closure plan) Closure Plan (only) OCD Conditions (see attachment) Separative Signature: Approval Date: Jan Environmental Specialst OCD Permit Number: OCD Permit Number: OCD P	ee front page 29, 2015 ng the closure report. not complete this

22.	
Operator Closure Certification:	
I hereby certify that the information and attachments submitted with this closure	report is true, accurate and complete to the best of my knowledge and
belief. I also certify that the closure complies with all applicable closure require	ments and conditions specified in the approved closure plan.
Name (Print): Kenny Davis	Title: Staff Regulatory Technician
Signature:	Date:12/3/14
e-mail address: kenny.r.davis@conocophillips.com	Telephone: <u>505-599-4045</u>

ConocoPhillips Company San Juan Basin Below Grade Tank Closure Report

Lease Name: Lindrith B Unit 25

API No.: 3003923247

In accordance with Rule 19.15.17.13 NMAC the following information describes the closure of the below-grade tank referenced above. All proper documentation regarding closure activities is being included with the C-144.

General Plan:

- 1. COPC shall close a below-grade tank within 60 days of cessation of operations per Subsection G.4 of 19.15.17.13 NMAC. This will include a) below-grade tanks that do not meet the requirements of Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC or is not included in Paragraph (5) of Subsection I of 19.15.17.11 NMAC within five years, if not retrofitted to comply with Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC; b) an earlier date that the division requires because of imminent danger to fresh water, public health or the environment. For any closure, BR will file the C144 Closure Report as required.
- 2. The below-grade tank referenced above was permitted and closed within 60 days of cessation of the below-grade tanks operation.
- 3. COPC shall remove liquids and sludge from a below-grade tank prior to implementing a closure method and shall dispose of the liquids and sludge in a division-approved facility. The facilities to be used will be Basin Disposal (Permit #NM-01-005), JFJ Landfarm % Industrial Ecosystem Inc. (Permit # NM-01-0010B) and Envirotech Land Farm (Permit #NM-01-011). The liner after being cleaned well (Subsection D, Paragraph 1, Subparagraph (m) of 19.15.9.712 NMAC) will be disposed of at the San Juan County Regional Landfill located on CR 3100.

All recovered liquids were disposed of at Basin Disposal (Permit #NM-01-005) and any sludge or soil required to be removed to facilitate closure was hauled to Envirotech Land Farm (Permit #NM-01-011) and JFJ Landfarm % IEI (Permit #NM-01-0010B). The liner was cleaned per Subsection D, Paragraph 1, Subparagraph (m) of 19.15.9.712 NMAC was disposed of at the San Juan County Regional Landfill located on CR 3100.

4. COPC Will receive prior approval to remove the below-grade tank and dispose of it in a division-approved facility or recycle, reuse, or reclaim it in a manner that the appropriate division district office approves.

The below-grade tank was disposed of in a division-approved manner.

5. If there is any on-site equipment associated with a below-grade tank, then COPC shall remove the equipment, unless the equipment is required for some other purpose.

All on-site equipment associated with the below-grade tank was removed.

6. COPC will test the soils beneath the below-grade tank to determine whether a release has occurred. COPC shall collect, at a minimum, a five point, composite sample; collect individual grab samples from any area that is wet, discolored or showing other evidence of a release; and analyzed for the constituents listed in Table I of 19.15.17.13 NMAC. COPC shall notify the division of its results on form C-141.

7. A five point composite sample was taken of the below-grade tank using sampling tools and all samples tested per Subsection B of 19.15.17.1 3(B)(1)(b). (Sample results attached).

Components	Tests Method	Limit (mg/kg)
Benzene	EPA SW-846 8021B or 8260B	0.2
BTEX	EPA SW-846 8021B or 8260B	50
TPH	EPA SW-846 418.1	100
Chlorides	EPA 300.1	250

8. If COPC or the division determines that a release has occurred, then COPC shall comply with 19.15.3.116 NMAC and 19.15.1.19 NMAC, as appropriate.

A release was not determined for the above referenced well.

9. If the sampling program demonstrates that a release has not occurred or that any release does not exceed the concentrations specified in Table I of 19.15.17.13 NMAC, then COPC shall backfill the excavation with compacted, non-waste containing, earthen material; construct a division-prescribed soil cover; recontour and re-vegetate the

The below-grade tank area passed all requirements of Paragraph (4) of Subsection E of 19.15.17.13 NMAC and was backfilled with compacted, non-waste containing, earthen material.

- 10. Notice of Closure will be given prior to closure to the Aztec Division office between 72 hours and one week via email or verbally. The notification of closure will include the following:
 - i. Operator's name
 - ii. Location by Unit Letter, Section, Township, and Range. Well name and API number.

Notification is missing due to employee turnovers. ConocoPhillips has reviewed our internal processes and has updated them to include the required 72 hour notification.

11. The surface owner shall be notified of COPC's closing of the below-grade tank 72 hours, but not more than one week, prior to closure as per the approved closure plan via certified mail, return receipt requested.

The closure process notification to the landowner not found. COPC was not aware that the original notification sent at the time of Permitting was not the only closure notification required.

ConocoPhillips has reviewed our internal processes and has updated them to include the required 72 hour notification.

12. Re-contouring of location will match fit, shape, line, form and texture of the surrounding. Re-shaping will include drainage control, prevent ponding, and prevent erosion. Natural drainages will be unimpeded and water bars and/or silt traps will be place in areas where needed to prevent erosion on a large scale. Final re-contour shall have a uniform appearance with smooth surface, fitting the natural landscape.

The below-grade tank area was re-contoured to match fit, shape, line, form and texture of the surrounding area. Re-shaping, including drainage control, to prevent ponding and erosion. Natural drainages were unimpeded and water bars and/or silt traps were placed in areas where needed to prevent erosion on a large scale. Final recontour has a uniform appearance with smooth surface, fitting the natural landscape.

13. COPC Shall seed the disturbed areas the first favorable growing season following closure of a below-grade tank. Seeding will be accomplished via drilling on the contour whenever practical or by other division-approved

methods. BLM stipulated seed mixes will used on federally regulated lands and division-approved seed mixtures (administratively approved if required) will be utilized on all State or private lands. A uniform vegetative cover has been established that reflects a life-form ratio of plus or minus fifty percent (50%) of pre- disturbance levels and a total percent plant cover of at least seventy percent (70%) of pre-disturbance levels, excluding noxious weeds. If alternate seed mix is required by the state, private owner or tribe, it will be implemented with administrative approval if needed. COPC will repeat seeding or planting will be continued until successful vegetative growth occurs.

Provision 13 was accomplished through complying with BLM seeding requirements as allowed by the BLM/OCD MOU.

14. A minimum of four feet of cover shall be achieved and the cover shall include one foot of suitable material, with chloride concentrations less than 600 mg/kg as analyzed by EPA Method 300.0, to establish vegetation at the site, or the background thickness of topsoil, whichever is greater.

The below-grade tank area was backfilled and more than four feet of cover was achieved and the cover included one foot of suitable material to establish vegetation at the site.

- 15. All closure activities will include proper documentation and be available for review upon request and will be submitted to OCD within 60 days of closure of the below-grade tank. Closure report will be filed on C-144 and incorporate the following:
 - Soil Backfilling and Cover Installation (See Report)
 - Re-vegetation application rates and seeding techniques (See Report)
 - Photo documentation of the site reclamation (Included as an attachment)
 - Confirmation Sampling Results (Included as an attachment)
 - Proof of closure notice (Included as an attachment)

Closure Documentation was not submitted within the 60 day requirement due to employee turnovers. ConocoPhillips has reviewed our internal processes and has updated them to ensure closure documentation is submitted with the 60 day time frame.



June 27, 2011

Project Number 96052-1962

Ms. Kelsi Harrington ConocoPhillips 3401 East 30th Street Farmington, New Mexico 87401

Phone: (505) 599-3403

RE: BELOW-GRADE TANK CLOSURE DOCUMENTATION FOR THE LINDRITH B #25 WELL SITE, RIO ARRIBA COUNTY, NEW MEXICO

Dear Ms. Harrington:

Enclosed please find the field notes and analytical results for below-grade tank (BGT) closure activities performed at the Lindrith B #25 well site located in Section 9, Township 24 North, Range 3 West, Rio Arriba County, New Mexico. Upon Envirotech personnel's arrival on June 1, 2011, one (1) five (5)-point composite sample was collected from beneath the former BGT. The sample was analyzed in the field for total petroleum hydrocarbons (TPH) using USEPA Method 418.1, for organic vapors using a photoionization detector (PID), and for chlorides. Additionally, the sample was placed into a four (4)-ounce glass jar, capped headspace free, and transported on ice, under chain of custody, to Envirotech's Analytical Laboratory to be analyzed for TPH using USEPA Method 8015, for benzene and total BTEX using USEPA Method 8021 and for chlorides using USEPA Method 4500. The sample returned results below the regulatory standards for benzene, total BTEX and chlorides, but above the regulatory standard of 100 parts per million (ppm) TPH using USEPA Method 418.1, confirming a release did occur.

A brief site assessment was conducted and the regulatory standards were determined to be 100 ppm TPH and 100 ppm organic vapors due to depth to groundwater being less than 50 feet and horizontal distance to surface water less than 200 feet, pursuant to New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Spills, Leaks, and Releases. The sample from beneath the former BGT returned results below the regulatory standard for TPH using USEPA Method 8015; see attached *Analytical Results*. Envirotech, Inc. recommends no further action in regards to this incident.

We appreciate the opportunity to be of service. If you have any questions or require additional information, please contact our office at (505) 632-0615.

Respectfully submitted,

Envirotech, Inc.

Toni McKnight, EIT

Environmental Project Manager tmcknight@envirotech-inc.com

Enclosures:

Field Notes

Analytical Results

Cc:

Client File 96052

96052-1962

	1000	1160	×					
PAGE NO: OF	1	ENVIRO	ONMENTA	ROTEC L SCIENTI . HIGHWAY	STS & ENGI	NEERS	ENVIRONI SPECIALIS	MENTAL ST: T. McKnig of
DATE STARTED: 6/1/	The second secon	FA	ARMINGTO	ON, NEW M	EXICO 8740	ı	LAT:N36	. 321066
DATE FINISHED: 6/1/				VE: (505) 63				07.158800
	FIELD R	EPORT: I	BGT/P	IT CLOS	SURE VE	RIFICA'	TION	
	indrith	The second liverage and the se	WELL #:		TEMP PIT:		NENT PIT:	BGT: X
LEGAL ADD: UNIT:		SEC: 9	alter	TWP: 25	11	RNG: 3 (The second secon	PM: NM
QTR/FOOTAGE: 12 50	15631	940 FE	CNTY: R	TO ARR	134	ST: NE	w MEX	TLO
EXCAVATION APPROX:	N/A	FT. X	NIA	FT. X	WIA	FT. DEEP	CUBIC YA	RDAGE: N/A
DISPOSAL FACILITY:	N/A.				TION METH			
LAND OWNER:	PrNW			039-23		BGT/PIT		
CONSTRUCTION MATER	IAL: Meta	1	DOUBLE-	WALLED, V	WITH LEAK	DETECTION	V: NIA	
LOCATION APPROXIMAT	TELY:	100	FT. 18	10"	FROM WELL	HEAD		
DEPTH TO GROUNDWAT		The second secon	The second liverage and the second		reil het	1 Sea-	Ch	
TEMPORARY PIT - C								
BENZENE ≤ 0.2 mg/kg, B				14 (CIUI) 13	o mg/kg, 1Fm	(410.1) \(\text{250}\)	o mg/kg, cin	POKUDES S 200 IIIB/KB
TEMPORARY PIT - C				Y (0018) . FO		44.0.43	# OTT	ODIDEO - 1000 A
BENZENE ≤ 0.2 mg/kg, B	IEX ≤ 50 mg/kį	g, GRO & DRO	FRACTION	N (8015) ≤ 50	0 mg/kg, TPH (418.1)≤2500	mg/kg, CHL	ORIDES ≤ 1000 mg/kg
PERMANENT PIT OF								
BENZENE ≤ 0.2 mg/kg,	BTEX ≤ 50 mg	/kg, TPH (418.	1) ≤ 100 mg/l	kg, CHLORI	DES ≤ 250 mg/l	cg		
		Marie I		The same of the sa	D 418.1 ANAL		1	
	TIME	SAMPLE I.D.	LAB NO.	WEIGHT (g	mL FREON	DILUTION		CALC. (mg/kg)
	10:47		1	-	20	ü	207	808
	BGTComp	12:39	2	5	20	-	200	500
			3					
			4					
			5					
PERIIV	ŒTER		FIELD C	HLORIDE	S RESULTS		PRO	FILE
	1 1		SAMPLE	100	CALC.			
) N	1 L		ID	READING	(mg/kg)			la
		(3)	1		_]		
D. SOIL						1		
<i>→</i>		1				1		
		725						
		La XI		PID RESU	700	-		
		125			RESULTS	_	1	
	-1 th	7/	SAM	PLE ID	(mg/kg)		1	11
- NW	EN DU			1	1.5		La.	or croping
	U igo . 3						Samp	(1,66,40)
1-1214		/				-	Samp	16
(A)			-			1		C
		- 1 ²						200
LAB SAMPL	THE RESERVE OF THE PARTY OF THE	NOTES:	AMPLE	te Ca.	5 for 8	015/0071	1/1-	\$150' From wash
	S RESULTS	-				-1 700 21	101	
BENZEN BTEX	E	- · L	OCATION	: LINDRIT	TH B UNIT V	VELI 25 D	ĸ	Ranking = 30
GRO & DR	RO	1 1	AE LAAOKH	W: 10302	244		17	- 100 00 m
CHLORID		- <u>N</u>	MAXWELL	CODE: T	110 (LABO	R)		= 100 ppm TPH
		· U	ISER ID: E	BENALE				710
All and the second second		<u> Iv • P</u>	ROJECT	LEAD: SH	ELDON MO	NTOVA		

AND USE: 9 TWP: 240 PRC CONTRACTOR: 10 M CNTY: F. AST. 10 M SPECIALIST: T. M. CANTEROTAGE: 1250 FSC 840 FSC CONTRACTOR: 10 M CNTY: F. AST. 10 M SPECIALIST: T. M. CANTEROTAGE: 1250 FSC 840 FSC CONTRACTOR: 10 M CNT 1	Conoco		E	(508	NVIFO 5) 632-0615 (8 S. Hwy 64, Farmi	00) 362-1879		Project No:	
SPILL PERIMETER OVM RESULTS SAMPLE FIELD HEADSPACE PID ID (opm) 1 1.5	LOCATION: NAME: (;; QUAD/UNIT: O S QTR/FOOTAGE: LSO F86 EXCAVATION APPROX: DISPOSAL FACILITY: No LAND USE: (GRA 2 M) CAUSE OF RELEASE: B SPILL LOCATED APPROXIM DEPTH TO GROUNDWATER NMOCD RANKING SCORE:	Con 6 12 18 40 6 18 10 10 6 12 18 10 6 12 18 10	FT. X— TWP: 24N II FT. X— TWO MAN II TWO MEAREST W	WELL#: SRNG: 340 CONTRAC	PM: NM TOR: No. FT. X REMEDIATION MATERIAL R JRCE: 7/0	FROM ACCOMPANY	T: 1) M TT. DEEP D: No M AND OWN Modu C Cheal NEAREST:	DATE STA DATE FINI ENVIRONM SPECIALIS CUBIC YA LE NER: Fri	RTED: 6/1/201/ SHED: 6/1/201/ SHED: 6/1/201/ MENTAL ST. T. M. Knight, RDAGE: Vafe Taids
RESULTS SAMPLE FIELD HEADSPACE PID (ppm) POAT LAB SAMPLES SAMPLE ANALYSIS TIME	200 StD	10:47	SAMPLE I.D.					204	
	AN POA		3GT Pit	ID	RESULTS FIELD HEAD (pp)	ES	41		



EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client:

ConocoPhillips

Sample No.:

1

Sample ID:

BGT Composite

Cool and Intact

Sample Matrix:

Soil

Preservative:

Cool

Condition:

Project #:

96052-1962

Date Reported:

6/9/2011

Date Sampled:

6/1/2011

Date Analyzed:

6/1/2011

Analysis Needed:

TPH-418.1

		Det.
W N	Concentration	Limit
Parameter	(mg/kg)	(mg/kg)

Total Petroleum Hydrocarbons

808

5.0

ND = Parameter not detected at the stated detection limit.

References:

Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis

of Water and Waste, USEPA Storet No. 4551, 1978.

Comments:

Lindrith B #25

Instrument calibrated to 200 ppm standard. Zeroed before each sample

Toni McKnight, EIT

Printed

Review

Greg Crabtree, PE

Printed



TOTAL PETROLEUM HYDROCARBONS

0-1	Data
Cal	Date

1-Jun-11

Parameter	Standard Concentration mg/L	Concentration Reading mg/L	
TPH	100		
	200	204	
	500		4
	1000		

The accepted percent relative deviation (%RSD) of the calibration factor is less than 20% over the working range.

Tem Man	6/9/2011
Analyst	Date
Toni McKnight, EIT	
Print Name	
Bu Cit	6/9/2011
Review	Date
Greg Crabtree, PE	

Print Name



Field Chloride

Client:

ConocoPhillips

Project #:

96052-1962

Sample No.:

1

Date Reported:

6/9/2011

Sample ID:

BGT Composite

Date Sampled:

6/1/2011

Sample Matrix:

Soil

Date Analyzed:

6/1/2011

Preservative:

Cool

Analysis Needed:

Chloride

Condition:

Cool and Intact

		Det.
	Concentration	Limit
Parameter	(mg/kg)	(mg/kg)

Field Chloride

ND

33.0

ND = Parameter not detected at the stated detection limit.

References:

"Standard Methods for the Examination of Water and Wastewater", 18th ed., 1992

Hach Company Quantab Titrators for Chloride

Comments:

Lindrith B #25

Analyst

Toni McKnight, EIT

Printed

Heview

Greg Crabtree, PE

Printed



EPA METHOD 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

Client: Sample ID: Laboratory Number: Chain of Custody No: Sample Matrix: Preservative:	ConocoPhillips BGT Composite 58354 11827 Soil Cool	Project #: Date Reported: Sampled: Date Received: Date Extracted: Date Analyzed:	96052-1962 06-02-11 06-01-11 06-01-11 06-02-11
	Cool Intact	Date Analyzed: Analysis Requested:	06-02-11 8015 TPH
Condition.	IIIGOL	Ariarysis requested.	0010 1111

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	16.2	0.1
Total Petroleum Hydrocarbons	16.2	

ND - Parameter not detected at the stated detection limit.

References:

Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid

Waste, SW-846, USEPA, December 1996.

Comments:

Lindrith B #25

Review

5796 US Highway 64, Farmington, NM 87401

Ph (505) 632-0615 Fr (800) 362-1879 Fx (505) 632-1865 lab@envirotech-inc.com envirotech-inc.com



EPA Method 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	06-02-11 QA/QC	Date Reported:	06-02-11
Laboratory Number:	58351	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	06-02-11
Condition:	N/A	Analysis Requested:	TPH

	I-Cal Date	I-Cal RF:	C-Cal RF:	% Difference	Accept. Range
Gasoline Range C5 - C10	06/02/11	9.996E+02	1.000E+03	0.04%	0 - 15%
Diesel Range C10 - C28	06/02/11	9.996E+02	1.000E+03	0.04%	0 - 15%

Blank Conc. (mg/L - mg/Kg)	Concentration	Detection Limit
Gasoline Range C5 - C10	26.7	0.2
Diesel Range C10 - C28	1.9	0.1

Duplicate Conc. (mg/Kg)	Sample	Duplicate	% Difference	Range
Gasoline Range C5 - C10	ND	ND	0.00%	0 - 30%
Diesel Range C10 - C28	ND	ND	0.00%	0 - 30%

Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept. Range
Gasoline Range C5 - C10	ND	250	242	96.7%	75 - 125%
Diesel Range C10 - C28	ND	250	245	98.2%	75 - 125%

ND - Parameter not detected at the stated detection limit.

References:

Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid

Waste,

SW-846, USEPA, December 1996.

Comments:

QA/QC for Samples 58351-58354, 58358-58360, 58364-58367

Review

5796 US Highway 64, Farmington, NM 87401



EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	ConocoPhillips	Project#:	96052-1962
Sample ID:	BGT Composite	Date Reported:	06-02-11
Laboratory Number:	58354	Date Sampled:	06-01-11
Chain of Custody:	11827	Date Received:	06-01-11
Sample Matrix:	Soil	Date Analyzed:	06-02-11
Preservative:	Cool	Date Extracted:	06-01-11
Condition:	Intact	Analysis Requested:	BTEX
		Dilution:	10

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)	
	ND	0.9	
Benzene Toluene	ND ND	1.0	
Ethylbenzene	ND	1.0	
p,m-Xylene	1.5	1.2	
o-Xylene	ND	0.9	
Total BTEX	1.5		

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	87.6 %
	1,4-difluorobenzene	92.6 %
	Bromochlorobenzene	94.0 %

References:

Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA,

December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846,

USEPA, December 1996.

Comments:

Lindrith B #25

Analyst

Review



EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client: Sample ID: Laboratory Number: Sample Matrix: Preservative: Condition:	N/A 0602BBLK QA/QC 58353 Soil N/A N/A	D D D D A	roject #: ate Reported: ate Sampled: ate Received: ate Analyzed: nalysis:	01 N N	/A 6-02-11 /A /A 6-02-11 TEX
Calibration and	I-Cal RF:	C-Cal RF:	%Diff.	Blank	Detect.
Detection Limits (ug/L)		Accept Range	0 - 15%	Conc	Limit
Benzene	3.5034E+006	3.5105E+006	0.2%	ND	0.1
Toluene	3.6883E+006	3.6957E+006	0.2%	ND	0.1
Ethylbenzene	3.2344E+006	3.2409E+006	0.2%	ND	0.1
p,m-Xylene	8,7142E+006	8.7316E+006	0.2%	ND	0.1
o-Xylene	2.9945E+006	3.0005E+006	0.2%	ND	0.1
Duplicate Conc. (ug/Kg)	Sample	Duplicate	%Diff.	Accept Range	Detect, Limit
Benzene	ND	ND	0.0%	0 - 30%	0.9
Toluene	ND	ND	0.0%	0 - 30%	1.0
Ethylbenzene	ND	ND	0.0%	0 - 30%	1.0
	ND	ND	0.0%	0 - 30%	1.2
p,m-Xylene		ND	0.0%	0 - 30%	0.9

Spike Conc. (ug/Kg)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Range
Benzene	ND	500	511	102%	39 - 150
Toluene	ND	500	513	103%	46 - 148
Ethylbenzene	ND	500	512	102%	32 - 160
p,m-Xylene	ND	1000	1,020	102%	46 - 148
o-Xylene	ND	500	512	102%	46 - 148

ND - Parameter not detected at the stated detection limit.

Dilution: Spike and spiked sample concentration represent a dilution proportional to sample dilution,

References:

Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA,

December 1996.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments:

QA/QC for Samples 58353-58354, 58364-58367

Review

Analyst



Chloride

Client:

ConocoPhillips

96052-1962

Sample ID:

BGT Composite

Lab ID#:

58354

06/02/11

Sample Matrix:

Soil

Date Reported: Date Sampled:

06/01/11

Date Received:

Project #:

06/01/11

Preservative:

Cool

Date Analyzed:

06/02/11

Condition:

Intact

Chain of Custody:

11827

Parameter

Concentration (mg/Kg)

Total Chloride

30

Reference:

U.S.E.P.A., 4500B, "Methods for Chemical Analysis of Water and Wastes", 1983. Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments:

Lindrith B #25

5796 US Highway 64, Farmington, NM 87401

Ph (505) 632 0615

Review

Fr (800) 362-1879 Fx (505) 632-1865 lab@envirotech-inc.com envirotech-inc.com

* XOST * CHAIN OF CUSTODY RECORD RUSH 1827

The second secon))									Æ	1				Γ
Conoco Phillips	. II. ps		Project Name / Location:	ig g	#25				,			ANAL	'SIS/	PARAN	ANALYSIS / PARAMETERS	Ω				
Client Address:			Sampler Name:	1.9h	#			(3108					d		<u> </u>					,
Olient Phone No.:			Client No.: 96052	19	63			Method	odteM)	borlieM) 	noinA \ r		I/H rtiw	(1 011)	(418.1) EDIPC			1000,010	looO ek	opini ele
Sample No./	Sample	Sample	Lab No.		Sample Matrix	No.Volume of Containers	No.Volume Preservative of Hgd, Hg 3					IOH	ЧЛОТ	HA9				1000S		dunc
BCT composite		Prince A	58354	Solld	Sludge Aqueous	201/	, >	>							>				<u>></u>	
				Soil	Sludge															
				Soild	Sludge Aqueous															T
				Soil	Sludge Aqueous															
				Soil	Sludge															
				Soil	Sludge															
				Soil	Sludge															
				Soil	Sludge															
				Soil	Sludge															
				Soil	Sludge							_		_					_	
Relinquished by: (Signature)	ature)				Date 6/1/1/	Time 15:22	Réceived by: (Signature)	d by:	Signatu	F 10	orono o	9					Date (///	~	Time /5:22	2
Relinquished by: (Signature)	ature)						Received by: (Signature)) :d by:	Signat	eur										T .
Relinquished by: (Signature)	ature)						Received by: (Signature)	od by: (Signatu	(eur										1
ROST	1×				m	envirotech Analytical Laboratory	Nirotech Analytical Laboratory	tab	Opposit	C è		4 11								T
			5796 U	S Highway	5796 US Highway 64 • Farmington, NM 87401 • 505-632-0615 • lab@envirotech-inc.com	gton, NM 874	401 • 505-62	32-0615	• lab@	envirot	ech-inc.	mo								

ACCENT Printing • Form 28-0807

<u>District I</u> 1625 N. French Dr., Hobbs, NM 88240 District II District III

1000 Rio Brazos Road, Aztec, NM 87410 District IV

State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 1220 South St. Francis Dr. Form C-141 Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back

1220 S. St. France	cis Dr., Santa	Fe, NM 87505		1220 S. St. Francis Dr., Santa Fe, NM 87505 Santa Fe, NM 87505 Side of 10								
			Rele	ase Notific				ction			_	
						OPERAT	TOR	☐ Initial	Report [Final Repo	rt	
Name of Co						Contact Kenny Davis						
					Felephone No. (505) 599-4045							
						Facility Type: Gas Well						
Surface Own	Surface Owner FEE Mineral Owner I							Lease No	. FEE		_	
LOCATION											_	
Unit Letter O	Section 9	Township 24N	Range 3W	Feet from the 1250	North/ South	South Line	Feet from the 1840		County Rio Arriba			
U		2414	3 11	Latitude36.32	112800		e <u>-107.15872000</u>					
	NATURE						Service Company of the Company of th	T 1/1 n -	1 NT/A			
Type of Release BGT Closure Summary						Release N/A Iour of Occurrence		covered N/A lour of Discov	very N/A	-		
Source of Release: NONE Was Immediate Notice Given?					If YES, To		e N/A Date and H	our or Discov	CI y IV/A	\neg		
Yes ☐ No ☒ Not Required					N/A	771101111						
By Whom? N	By Whom? N/A						Iour N/A					
Was a Water N/A		ched?	☐ Ye	s 🛛 No		If YES, Ve	olume Impacting t	the Watercourse.				
If a Watercon N/A Describe Can N/A	,	pacted, Descr em and Reme										
		and Cleanup LEASE FOU		ken.* <mark>N REMOVAL</mark>								
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.												
Signature:	X		5))		Approved by	OIL CON	SERVATION :	DIVISION	<u>1</u>		
Printed Nam Title: Staff						Approval Da	nte:	Expiration I	Date:			
		.r.davis@con	ocophillip	s.çom		Conditions			Attached [



Attached

Date: 12/3/14 Phone: (505) 599-4045 * Attach Additional Sheets If Necessary





