



# Pumping Service Report

9198768

Client Name Whiting Petroleum Corp.	Well Name Horsetail 02D-0204	Rig Pioneer Drilling 54	Job Date October 15, 2014	Call Sheet 0
Client Representative BJ	Surface Well Location NW NW Sec 2:T10N:R57W	Down Hole Well Location	Job Type Liner Casing	

## Well Profile

Maximum Treating Pressure (psi):	---
Predicted Bottom Hole Static Temperature (°F):	--- @ ---
Bottom Hole Circulating Temperature (°F):	--- @ ---
Bottom Hole Logged Temperature (°F):	--- @ ---

## Open Hole

Size (in)	Excess (%)	TMD From (ft)	TMD To (ft)	TVD From (ft)	TVD To (ft)
6.125	--	5,963.000	9,942.000	--	--

## Casing

Size (in)	Weight (lb/ft)	Grade	Collapse Pressure (psi)	Internal Yield Pressure (psi)	Capacity (bbl)	I.D. (in)	O.D. (in)	Depth From (ft)	Depth To (ft)
4.500	11.600	---	--	--	--	--	--	4,831.7	9,942.7

## Drill Pipe

Size (in)	Weight (lb/ft)	Grade	Collapse Pressure (psi)	Capacity (bbl)	I.D. (in)	O.D. (in)	Depth From (ft)	Depth To (ft)
4.000	14.000	---	--	--	--	--	0.000	93.000
4.000	28.000	---	--	--	--	--	93.000	4,801.000

## Products

### Treatment Interval 1

From Depth (ft): 4831.71

To Depth (ft): 9942.71

Acids/Blends/Fluids:

Tail: 375 Sacks of 1-1-0 G, Density = 13.7 lb/gal, Volume Pumped = 100 (bbl)  
Water Temperature(°F) = 60, Bulk Temperature(°F) = 60, Slurry Temperature(°F) = 60  
+ 8 % of SilFume (Preblend),  
+ 0.7 % of CFL-4 (Preblend),  
+ 2 % of Gel (Preblend),  
+ 0.45 % of LTR (Preblend),  
+ 0.2 % of AS-3 (Preblend),  
+ 1 % of FWCA-H (Preblend),  
+ 0.1 % of CFR-5 (Preblend),  
+ 0.25 lb/sack of Polyflake (Preblend)

## Fluid & Cement Data

Expected Cement Top: Depth (ft): 4831.71

### Wellbore Fluid

Fluid Type	Viscosity (cP)	Density (lbs/gal)	Yield Point (psi)	Temperature (°F)	Recorded@
Water Based Mud	--	9.500	--	--	Oct 15, 2014 17:38
Water	--	8.330	--	--	Oct 15, 2014 17:41





**Pumping  
Service Report**

**9198768**

**Attachment & Tools**

**Down Hole Tools**

<u>Tool Type</u>	<u>Depth (ft)</u>	<u>Supplier</u>
Guide/Float Shoe	9,903.000	Third Party

**Units & Personnel**

**Units**

<u>Truck Unit No.</u>	<u>Main Type</u>	<u>Sub Type</u>	<u>Tractor Unit No.</u>	<u>Main Type</u>	<u>Sub Type</u>	<u>Time On Location</u>	<u>Time Off Location</u>
201168	PICKUP	1 Ton				10/15/2014 09:15	10/15/2014 18:00
446172	TRAILER	Bulker				10/15/2014 09:15	10/15/2014 18:00
445070	TRAILER	SCM Twin				10/15/2014 09:15	10/15/2014 18:00

**Crew and Bonuses**

<u>Employee</u>	<u>Start Shift</u>	<u>End Shift</u>	<u>Second Start Shift</u>	<u>Second End Shift</u>
Price, Ryan	10/15/2014 09:15	10/15/2014 18:00		
Paiu, Vladislav	10/15/2014 09:15	10/15/2014 18:00		
Young, Craig	10/15/2014 09:15	10/15/2014 18:00		
Peterson, Ryan	10/15/2014 09:15	10/15/2014 18:00		

**Treatment Reports & Remarks**



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9198768

## Treatment Report

Event #	Event Time	Event Description	Fluid Type	Rate (bbl/min)	Tubular Pressure (psi)	Annular Pressure (psi)	Stage Volume (bbl)	Total Volume (bbl)
1	Oct 15, 2014 09:15	Arrive On Location	---	--	--	--	--	0.00
2	Oct 15, 2014 09:30	Tailgate Meeting	---	--	--	--	--	0.00
3	Oct 15, 2014 09:50	Rig In	---	--	--	--	--	0.00
4	Oct 15, 2014 11:20	Safety Meeting	---	--	--	--	--	0.00
5	Oct 15, 2014 11:30	Sign-off on Safety	---	--	--	--	--	0.00
6	Oct 15, 2014 12:05	Pump	Water	2.00	50.0	--	2.00	0.00
		Remarks: filled lines for pressure test						
7	Oct 15, 2014 12:08	Pressure Test	---	--	5,000.0	--	--	0.00
8	Oct 15, 2014 12:10	Pump	Water Based Mud	3.00	800.0	--	90.00	0.00
		Remarks: pumping bottoms up for rig.						
9	Oct 15, 2014 12:42	Drop Balls	---	--	--	--	--	0.00
10	Oct 15, 2014 12:42	Pump	Water Based Mud	3.00	900.0	--	106.00	0.00
		Remarks: pumped ball to shear						
11	Oct 15, 2014 13:38	Stop	---	--	--	--	--	0.00
12	Oct 15, 2014 13:47	Pump Spacer	Water	4.00	1,000.0	--	30.00	0.00
		Remarks: pumped visweep						
13	Oct 15, 2014 13:57	Mix Cement	1-1-0 G	3.00	200.0	--	100.00	0.00
14	Oct 15, 2014 14:40	Pump Spacer	Water	3.00	200.0	--	2.00	0.00
		Remarks: pumped 2 bbl water to clear cement from lines						
15	Oct 15, 2014 14:43	Wash	Water	2.00	25.0	--	5.00	0.00
		Remarks: washed to pits to clear all cement from lines						
16	Oct 15, 2014 14:51	Pump Displacement	Water	3.00	1,000.0	--	109.00	0.00
		Remarks: dart caught plug at 33 bbls away						
17	Oct 15, 2014 15:24	Bump Plug	---	2.00	1,800.0	--	--	0.00
18	Oct 15, 2014 15:26	Check Float	---	--	--	--	--	0.00
		Remarks: floats held						
19	Oct 15, 2014 15:30	Pump	Water	2.00	1,200.0	--	5.00	0.00
		Remarks: pumped for wet shoe 5 bbls						
20	Oct 15, 2014 15:44	Pressure Test	---	--	--	2,400.0	--	0.00
		Remarks: rig did pressure test for backside						
21	Oct 15, 2014 15:49	Pump	Water	5.00	800.0	--	108.00	0.00
		Remarks: rolled hole to clear cement from top liner						
22	Oct 15, 2014 16:16	Stop	---	--	--	--	--	0.00
23	Oct 15, 2014 16:45	Rig Out	---	--	--	--	--	0.00
24	Oct 15, 2014 17:30	Wash	---	--	--	--	--	0.00
25	Oct 15, 2014 17:45	Job Complete	---	--	--	--	--	0.00
26	Oct 15, 2014 17:50	Pre-Departure Meeting	---	--	--	--	--	0.00
27	Oct 15, 2014 18:00	Leave Location	---	--	--	--	--	0.00





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**Treatment Reports & Remarks**

Did Float Hold: Yes  
Fluid Returns : Yes  
Type : Cement  
Volume (bbl) : 30  
Temperature (°F) : 70  
FDAS Functioning Correctly : Yes  
Was the Program Followed As Per Design? : Yes

**Material Transfer Sheet Number**

Material Transfer Sheet Number

54565

**Comments To Service Report**

Job went great. Rig close to ready when we arrived on location. Good rig in from crew. Mission pump packing needed replaced so some fresh water spilled from duck ponds. Informed company rep and he said just to mention it in report. Overall great job from both crews. Company rep happy with job.



## General Terms and Conditions

Under these terms and conditions ("T&Cs") Sanjel (USA) Inc. ("Sanjel") agrees to provide, and you agree to purchase, the goods and services in the attached proposal or work order ("goods," "services" or "goods and services"). You understand and agree that the T&Cs govern and control the provision of all goods or services Sanjel provides to you, including any goods or services Sanjel provides or performs under written or oral requests for goods or services. You accept the T&Cs by informing Sanjel or allowing Sanjel to provide goods and services, whichever is first. You cannot change the T&Cs, and Sanjel rejects any proposals on your forms or otherwise. When used in the T&Cs, "we," "us," and "our" refer to both you and Sanjel, collectively.

**1. Entire Agreement.** If we have signed an agreement applicable to the goods and services, that agreement will apply and the T&Cs do not. If no signed agreement exists between us, the T&Cs are our entire agreement for the goods and services, and no prior discussion, agreement, conduct, or industry practice will affect them. The T&Cs may not be changed, superseded or replaced by any other agreement (including any terms in a purchase order, service order, invoice or other similar document) unless specifically agreed by each of us in writing.

**2. Acknowledgment.** You understand that interpretations, research, analysis, advice or interpretational data furnished by Sanjel ("Recommendations") are opinions based on inferences from measurements, empirical relationships and assumptions and industry practice and that Recommendations are not infallible, and the opinions of professional geologists, engineers, drilling consultants and analysts may differ. Sanjel does not warrant the accuracy, correctness, or completeness of the Recommendations, or that your or any third party's reliance on the Recommendations will accomplish any particular results. You assume full responsibility for the use of and decisions based on the Recommendations, and you hereby agree to release, defend, indemnify and hold Sanjel harmless from Claims arising from the use of the Recommendations.

**3. Payment.** You will pay Sanjel at the rates in the applicable proposal or work order (which are good for 90 days) in US dollars within 30 days of performance or a correct invoice, whichever is later. Sanjel may charge interest at 18% per year on all overdue amounts, and you will bear all costs of collection of overdue accounts, including legal fees.

**4. Services.** You acknowledge and agree that the services Sanjel may perform are of such a nature that results cannot be guaranteed, and Sanjel makes no representations, warranties or guarantees with respect to the results of the services. Sanjel's only warranty with regard to the services is that they will conform to the material aspects of the applicable scope of work.

**5. Goods.** Sanjel may provide goods to you under the T&Cs or in connection with the services. Sanjel warrants that goods will (a) substantially conform to the applicable scope of work (b) be free of defects and of good quality and workmanship, and (c) not be subject to any liens, claims or encumbrances. There are no warranties, express or implied, of merchantability, use, and fitness that extend beyond those expressly stated herein.

**6. Warranty Remedies.** Sanjel will re-perform any non-conforming services if Sanjel is notified before leaving the work site, and will repair or replace any non-conforming or defective goods you notify Sanjel of within 30 days after Sanjel provided them to you free of charge. If Sanjel is unable to repair the non-conforming services, Sanjel will reimburse you for costs of a third party to repair such services, up to 10% of the original work order for such services. If fishing services are required to retrieve goods, Sanjel may specify the provider and be present during recovery. The remedies will not apply if damage is caused by: (i) your failure to properly store or maintain the goods, (ii) abnormal well conditions, abrasive materials, corrosion due to aggressive fluids or incorrect specifications, (iii) unauthorized alteration or repair of the goods, (iv) loss of goods while on your site due to your or any third party's negligence, vandalism or force majeure, (v) Sanjel's lack of or incorrect information regarding well conditions, or (vi) use or handling of the goods in a manner inconsistent with Sanjel's recommendations. Sanjel's warranty obligations will terminate if you fail to perform your obligations, including your failure to pay on time.

**7. Delay and Cancellation.** If Sanjel cannot provide goods or services to you due to circumstances beyond its control, Sanjel may charge you actual costs incurred, including but not limited to: mileage; blending; materials (including handling and hauling); return delivery and restocking charges; and all location time in excess of the location time allowance. Orders for goods or services that you cancel after Sanjel has procured the required materials may be subject to a 25% restocking fee. If Sanjel provides materials to your specifications and you cancel for any reason (including an uncontrollable event) you will be charged a cancellation fee plus actual costs incurred as a result of such cancellation.

**8. Taxes.** Prices are exclusive of any municipal, state, federal, special or use taxes or levies imposed on the sale of goods or services. You will be responsible for all

taxes applicable to the provision of the goods or services.

**9. Additional Services Requests.** You will pay for services, equipment or materials not listed in a proposal but purchased or rented by Sanjel at your request at cost plus 25%. Sanjel has no liability to you for such services, equipment or materials.

**10. Proprietary Rights.** You acknowledge that any intellectual property Sanjel uses in connection with the T&Cs, or that is created or developed by Sanjel in the course of performing under the T&Cs, is the property of Sanjel at all times, and you understand that you are not entitled to any intellectual property rights in any of Sanjel's intellectual property, except as required to receive the benefit of the goods or services.

**11. Confidentiality.** Any non-public information that we learn about each other in connection with the T&Cs, including our relationship, is confidential information of the disclosing party, and neither of us may disclose confidential information of the other to any third party without the prior written consent of the disclosing party. We may each use confidential information of the other to perform under the T&Cs, and may share it only on a need-to-know basis with employees.

**12. Indemnity.** (A) Subject to Section 12(b) below, each of us ("Indemnitor") hereby agrees to release, defend, indemnify and hold the other, its affiliates, officers, directors, agents, partners, joint venturers, employees and contractors of every tier ("Indemnitee Group") harmless for all losses, claims, demands, causes of action, costs and expenses (including reasonable legal fees) (collectively, "Claims"), for personal injury, death and property damage to Indemnitor, its affiliates, officers, directors, agents, partners, joint venturers, employees and contractors of every tier arising out of or incident to the T&Cs or any goods or services provided hereunder, without regard to whether such Claim is caused, in whole or in part, by the negligence (whether sole, joint or concurrent, active or passive), contractual liability or other fault of any member of the Indemnitee Group or by any defect or pre-existing condition (whether known or unknown, patent or otherwise). (B) You hereby agree to release, defend, indemnify and hold Sanjel harmless for any Claims Sanjel may suffer or incur arising out of or incident to: well blowout or any uncontrolled well condition, fire, cratering, redrill or sidetracking, seepage or reservoir damage, loss or damage to the hole, pollution and contamination (except sudden and accidental pollution originating above the service of the earth and emanating from Sanjel's equipment while in Sanjel's care, custody and control), and loss or damage to Sanjel's (or its contractors') equipment while down the hole at new replacement value; even if caused in whole or in part by the sole, joint or concurrent negligence or other fault of Sanjel or any other person.

**13. Consequential Damages Exclusion:** Notwithstanding anything to the contrary, neither of us will be liable to the other for business interruptions, punitive, indirect or consequential damages relating to the goods or services (including but not limited to any loss of profit, loss of expected revenue, loss of hydrocarbons or loss of rig time).

**14. Disposal of Chemicals.** You will arrange and be responsible for the disposal of any used chemicals and hazardous materials related to the goods or services.

**15. Insurance.** Each of us will maintain, at its own cost, commercial general liability insurance covering its indemnification obligations under the T&Cs with combined single limits of at least \$5,000,000 per occurrence and in the aggregate, worker's compensation coverage as and in amounts required by applicable law, and automobile liability coverage with a combined single limit of \$2,000,000. We will obtain insurance from carriers with AM Best ratings of at least A-VII (or equivalent), ensure the other party is named as an additional insured, and ensure that our carriers waive rights of subrogation against the other party.

**16. Uncontrollable Events.** Except for payment obligations, if either of us is unable to comply with the T&Cs because of events beyond our reasonable control, we will promptly notify the other in writing and will make reasonable efforts to restore our ability to perform as soon as possible. If the inability to perform continues for more than 10 days, the other party may cancel the applicable job immediately, by giving written notice to the affected party.

**17. Waiver.** Failure to enforce any or all of the T&Cs will not relieve either party of its rights or obligations or constitute a waiver or prevent further enforcement.

**18. Assignment.** You will not assign any of your rights or obligations under this PO without Sanjel's approval, which Sanjel may not unreasonably withhold. Any assignment in violation of this provision will be null and void.

**19. Governing Law.** We agree that the laws of the State of Colorado govern the T&Cs, without the application of choice of law rules. Each of us voluntarily submits to the jurisdiction and venue of the federal or state courts (as applicable) of the State of Colorado for the adjudication of all disputes under the T&Cs.

April 2014