

State of Colorado
Oil and Gas Conservation Commission

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



FOR OGCC USE ONLY

REM 9800
Document 2526752
Date 08/02/2016

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:

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

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

OGCC Operator Number: 95960

Name of Operator: Wexpro Company

Address: PO Box 458

City: Rock Springs State: WY Zip: 82901

Contact Name and Telephone:

April Stegall

No: 307.352.7561

Fax: 307.352.7583

API Number: 05-081-06141

County: Moffat County

Facility Name: BW Musser 15 pit

Facility Number: 116637

Well Name: BW Musser

Well Number: 15

Location: (QtrQtr, Sec, Twp, Rng, Meridian): NWNW-9-11N-97W Latitude: 40.933196 Longitude: -108.303654

TECHNICAL CONDITIONS

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

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-cropland, Oil and Gas

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

Potential receptors (water wells within 1/4 mi, surface waters, etc.): 621' from natural drainage, 4820' from nearest water well

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

Impacted Media (check):

Extent of Impact:

How Determined:



Soils

TBD

Soil Analysis



Vegetation



Groundwater



Surface Water

REMEDIALATION WORKPLAN

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

Pit is closed. Pit appears to have been closed between 2006 and 2011.
See attached pit closure procedure.

Describe how source is to be removed:

See attached Pit Closure Procedure.

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 Pit Closure Procedure.



Page 2
REMEDIAL WORKPLAN (Cont.)

Tracking Number: _____
Name of Operator: _____
OGCC Operator No: _____
Received Date: _____
Well Name & No: _____
Facility Name & No: 116637

OGCC Employee: _____

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

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.

Pit has been backfilled to grade.
See attached Pit Closure Procedure.

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:

Composite samples of the pit bottom and sidewall have been previously obtained. Composite samples met Table 910-1 requirements. Sample depths from 2015 are unknown. One core sample will be obtained as confirmation of the composite samples, as per attached procedure.
Core samples will be obtained upon approval from COGCC.
See attached Pit Closure Procedure.

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

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: <u>2015</u>	Date Site Investigation Completed: <u>2016</u>	Date Remediation Plan Submitted: _____
Remediation Start Date: <u>NA</u>	Anticipated Completion Date: <u>2016</u>	Actual Completion Date: <u>TBD</u>

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

Print Name: April Stegall Signed: April Stegall
Title: Reclamation Agent Date: 8/2/2016

OGCC Approved: Phil Neidel Title: EPS Date: 8/12/16

See Blow for Conditions of Approval

The sample for TPH was collected on 11/3/2015 and analyses on 1/2/2016 which is outside of the holding time for the sample analyses. Discrete samples shall be collected and analyzed for TPH GRO and DRO with proper chain of custody in the area of previous pit. The samples take that were not qualified with hold times notes; PAH's BTEX and metals are valid and adequate to demonstrate concentrations are below COGCC table 910-1.

COGCC inspection dated 7/10/1985, document number 691336 noted that the pit was 20'x25' and was "100% oc" (Oil Covered).

The area identified in the attached photo show a vegetative kill area that should be investigated. 3 samples should be taken 3-5" below the surface in the area in the map attached.

Field notes should be included at the time of request for No Further Action with any soils observations noted at the time of sampling.

The Form 27 is conditionally approved; however, additional information or activities may be required during the course of remediation.

"Describe initial action taken":

First, a visual inspection will be performed; looking for signs of stained soil and any potential leeching of pit components that may have impacted surface water or groundwater. Other attachments include the following: NRC soil map description, topographic map and/or Google Earth image and additional information detailing the distance to the nearest water source, estimated groundwater depth and distance from the nearest water well.

Wexpro Company will determine, as best as possible, the location, size and estimated closure date of the pit by using sundries, permits, historic Google Earth imagery, site security diagrams and knowledge of the area obtained from long term Wexpro Company personnel.

It is believed that most, if not all, pits in the Hiawatha/Powder Wash area were lined with bentonite liners. These liners would have been broken up during the process of "stirring and airing" that occurs on all Wexpro Company pits prior to sampling.

"Describe how source is to be removed":

72 hour notification will be given to COGCC prior to sampling.

The pit will be located in the field based on information provided by Wexpro Company (*ex: COGCC inspections, site security diagrams, historic imagery, sundries, permits, personnel, visual inspection*).

Pit samples will be obtained using a sampling method capable of collecting representative soil samples (i.e. Geoprobe, auger/split spoon, hand auger, etc.).

The pit has been sampled previously, one core sample will be taken as confirmation of the previously taken composite samples, due to the cost of third party sampling and soil analysis. One sample will be taken from the sidewall. If the location of the load line's discharge to the pit is known, a sample of the wall opposite of the load line's discharge will be taken for this sample.

Background reference samples will also be obtained (*unless done previously*). Depth of samples will be determined by visual observations during sampling, as to best obtain a sample of the native soil. Crews will be watching for indications of groundwater during sampling. If groundwater is encountered, COGCC will be notified immediately.

All samples will be sent to a lab and tested according to Table 910-1. Testing results will be submitted to COGCC with an attached Form 4 Sundry, or new Form 27.

GPS coordinates (meeting Rule 215 requirements) for sampling points and depths will be provided with Form 27 and soil analysis results. All samples will be mapped and submitted with soil analysis results.

If samples meet Table 910-1 requirements, Wexpro Company will request closure of the facility in the COGCC database and NFA. If pit depth is known, it will be referenced in the Final Form 27 in comparison to depth at which pit samples were obtained. If samples do not meet Table 910-1 requirements, another Form 27 with remediation plan will be submitted.

"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.":

To be determined after soil analysis. If remediation is necessary, an additional Form 27 with remediation plan will be submitted.

In the event that pit tests high for EC/SAR/pH, COGCC requires that materials with elevated pH, SAR, or EC be buried under a minimum of three (3) feet of backfill cover and soil that satisfies either the Table 910-1 levels for pH, SAR, and EC or the background levels for such contaminants within three (3) feet of the ground surface at the site. In addition, the soil horizons must be replaced in their original relative position and reclaimed in accordance with 1000 Series Rules, including the establishment of vegetative cover on non-cropland and successful crop growth on cropland. During final reclamation of the well pad, the pits will be backfilled and re-contoured with the well pad (if not previously done). Berm dirt will be knocked into the pit area and compacted. If less than 3' of backfill material is required, soils used for production pit berms will include a confirmation soil sample to demonstrate that soil is below Table 910-1 standards. Additional material, if needed, will be agronomic topsoil, brought in from a commercial or offsite source.

"If groundwater has been impacted, describe proposed monitoring plan":

To be determined, if necessary. In the event that groundwater has been potentially impacted, the extent will be determined and Wexpro Company will submit a monitoring plan to COGCC. In general, a minimum of at least one up-gradient and three down-gradient monitoring wells will be required. The actual number will be dependent upon site specific conditions.

"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":

Surface reclamation will be compliant with COGCC 1000 series rules. Wexpro Company understands that approval of a Form 27 does not imply approval of the reclamation planned submitted prior to final reclamation of the well pad. Wexpro Company will notify the COGCC Regional Reclamation Specialist and Surface Owner for reclamation plan approval prior to final reclamation. All reclamation on Federal Surface will comply with BLM, or other implementing agency, specifications. Final reclamation will take place after the plugging and abandonment of the well.

"Attach samples and analytical results taken to verify remediation impacts. Show locations of samples on an onsite schematic or drawing. Is further site investigation required? If yes, describe":

Soil investigation for the project will be carried out as described above. All analytical data obtained will be submitted to COGCC, on an attached Form 4 Sundry, or new Form 27.

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

To be determined, if necessary. Final disposition of any E&P waste will be documented and submitted to COGCC. This includes haul tickets, volume of soil, etc.



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Tel (307) 352-7500
Fax (307) 352-7575

Jimmy L. Druce
General Manager
Direct: (307) 352-7555
Jimmy.Druce@questar.com

5/19/2016

Kris Neidel
COGCC
1120 Lincoln St., Suite 801
Denver, CO 80203

Pit Maintenance and History in Wexpro Company Hiawatha/Powder Wash fields

Dear Mr. Neidel:

I worked as an Operator/Chief Operator in Colorado's Powder Wash and Hiawatha fields for Wexpro Company between the years of 1984 and 2002. Upon my hiring, Carl Foster, who also worked for Wexpro, taught myself and the other operators procedures for production/water drain pit cleaning/maintenance.

The procedures were as follows; For several years pit with visible oil in them were either burned or soaked with hot water and skimmed. Burning of the pits was standard until regulations prohibited the practice.

When soaking and skimming would occur, hot water would be added to the pits. After the addition of hot water to the pits, the pits were allowed to "soak" for a minimum of 3 hours allowing the oil to separate from the water and come to the surface. After the oil and water separated, the oil would be skimmed off via tanker truck and the pits drained of water. Oil skimmed from the pits would be added to the condensate tanks, and the water would be added to the water tanks or hauled for disposal at a commercial source. This process was repeated continuously until there was no more visible oil in the pits.

This procedure was passed along during and after my departure from the Hiawatha and Powder Wash fields, and continues to be used today.

Kind regards,

A handwritten signature in cursive script that reads "Jimmy Druce".

Jimmy Druce
General Manager

For questions, please call April Stegall at 307-352-7561 or 307-371-3610.

Facility #116637

GPS sample coordinates-2015

Legend
ACE 5

BW Musser 15
pit floor sample (40.93327, -108.30324)
pit wall sample (40.93328, -108.30319)

Facility #116637

GPS sample coordinates-2015

Legend
ACE 5

BW Musser 15
offsite sample #1 (40.933327, -108.30298)

offsite #3 (40.93341, -108.30300)

offsite #2 (40.93330, -108.30288)

Pit #11637

Tammy Fredrickson
Wexpro
PO Box 458
Rock Springs, WY 82901

Date: December 22, 2015
Request Number: 34821R
Date Received: 11/03/15
Matrix: Soil

REPORT OF ANALYSIS

Project: P.W. Musser #15

Lab Number: P7553

Sample ID: Offsite Sample 1 11/3/15 10:45am

	Result	Units	Method	Date Analyzed	Analyst
Moisture	6.69	wt. %	Gravimetric	11/9/2015	DA
pH	8.14	std. units	USDA 60-2,3/150.1	11/9/2015	DA
Conductivity	564	μ/cm	USDA 60-2,3/120.1	11/9/2015	DA
Calcium	27.6	mg/kg Dry Basis	USDA 60-2,3/6010	11/12/2015	CB
Magnesium	2.44	mg/kg Dry Basis	USDA 60-2,3/6010	11/12/2015	CB
Sodium	16.2	mg/kg Dry Basis	USDA 60-2,3/6010	11/12/2015	CB
Sodium Absorption Ratio	0.79	Ratio	Calculated	11/13/2015	TB
Arsenic	1.92	mg/kg Dry Basis	EPA 3050/6020	12/22/2015	LG/MLE

Lab Number: P7554

Sample ID: Offsite Sample 2 11/3/15 10:45am

	Result	Units	Method	Date	Analyst
Moisture	3.34	wt. %	Gravimetric	11/9/2015	DA
pH	8.08	std. units	USDA 60-2,3/150.1	11/9/2015	DA
Conductivity	3,950	μ/cm	USDA 60-2,3/120.1	11/9/2015	DA
Calcium	137*	mg/kg Dry Basis	USDA 60-2,3/6010	11/12/2015	CB
Magnesium	15.9*	mg/kg Dry Basis	USDA 60-2,3/6010	11/12/2015	CB
Sodium	1,748*	mg/kg Dry Basis	USDA 60-2,3/6010	11/12/2015	CB
Sodium Absorption Ratio	37.7	Ratio	Calculated	11/13/2015	TB
Arsenic	1.37	mg/kg Dry Basis	EPA 3050/6020	12/22/2015	LG/MLE



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Wallaramie@wal-lab.com

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Tammy Fredrickson
Wexpro
PO Box 458
Rock Springs, WY 82901

Date: December 22, 2015
Request Number: 34821R
Date Received: 11/03/15
Matrix: Soil

REPORT OF ANALYSIS

Project: P.W. Musser #15

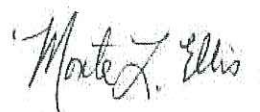
Lab Number: P7565

Sample ID: Offsite Sample 3 11/3/15 10:45am

	Result	Units	Method	Date Analyzed	Analyst
Moisture	5.89	wt. %	Gravimetric	11/9/2015	DA
pH	8.34	std. units	USDA 60-2,3/150.1	11/9/2015	DA
Conductivity	638	μ /cm	USDA 60-2,3/120.1	11/9/2015	DA
Calcium	18.1	mg/kg Dry Basis	USDA 60-2,3/6010	11/12/2015	CB
Magnesium	2.59	mg/kg Dry Basis	USDA 60-2,3/6010	11/12/2015	CB
Sodium	35.3	mg/kg Dry Basis	USDA 60-2,3/6010	11/12/2015	CB
Sodium Absorption Ratio	2.07	Ratio	Calculated	11/13/2015	TB
Arsenic	1.83	mg/kg Dry Basis	EPA 3050/6020	12/22/2015	LG/MLE

*Results are the average of 2 runs

End of Report
MLE/tab



Laboratory Manager



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Tammy Fredrickson
Wexpro
PO Box 458
Rock Springs, WY 82901

Date: December 22, 2015
Request Number: 34821R
Date Received: 11/03/15
Matrix: Soil

QUALITY CONTROL

		% Recovery
Calcium	ESI QC #1431121	103
Magnesium	ESI QC #1431121	103
Sodium	ESI QC #1431121	101

	Reference	Expected	Value	% Recovery
Conductivity	QCI-027-12	756	758	100
pH	WAL QC	6.00	5.99	100
Arsenic	Soil QC 10755	161	154	96

End of QC Report
MLE/tab



Laboratory Manager



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Tammy Fredrickson
Wexpro
PO Box 458
Rock Springs, WY 82901

Date: January 11, 2016
Request Number: 34822R
Date Received: 11/3/15
Matrix: Soil

REPORT OF ANALYSIS

Lab Number: P7556
Sample ID: B. W. Musser #15 Pit Floor 11/3/15 10:45am

	Result	Units	Method	Date Analyzed	Analyst
Nickel	13.7*	mg/kg	SW846 EPA 3051/6020	12/23/2015	MLE
Copper	17.4*	mg/kg	SW846 EPA 3051/6020	12/23/2015	MLE
Zinc	39.5*	mg/kg	SW846 EPA 3051/6020	12/23/2015	MLE
Arsenic	1.70*	mg/kg	SW846 EPA 3051/6020	12/23/2015	MLE
Selenium	0.163*	mg/kg	SW846 EPA 3051/6020	12/23/2015	MLE
Silver	0.613*	mg/kg	SW846 EPA 3051/6020	12/23/2015	MLE
Cadmium	0.136*	mg/kg	SW846 EPA 3051/6020	12/23/2015	MLE
Barium	488*	mg/kg	SW846 EPA 3051/6020	12/23/2015	MLE
Mercury	0.537*	mg/kg	EPA D7473	12/23/2015	MLE
Lead	20.1*	mg/kg	SW846 EPA 3051/6020	12/23/2015	MLE
Total Chromium	36.7*	mg/kg	SW846 EPA 3051/6020	12/23/2015	MLE
Chromium (VI)	0.2*	mg/kg	EPA 7196A	11/9/2015	CB
Chromium (III)	36.5	mg/kg	Calculated (ttl.Cr-CrVI)	1/11/2016	TB
Soluble, Boron	0.14	mg/L	Hot water ext./6020	11/10/2015	CB
pH	7.68	std. units	USDA 60-2,3/150.1	11/9/2015	DA
Conductivity	2,980	umhos/cm	USDA 60-2,3/120.1	11/9/2015	DA
Calcium	456*	mg/L	USDA 60-2,3/6010	11/12/2015	CB
Magnesium	58.1*	mg/L	USDA 60-2,3/6010	11/12/2015	CB
Sodium	486*	mg/L	USDA 60-2,3/6010	11/12/2015	CB
Sodium Absorption Ratio	5.7	Ratio	Calculated	11/13/15	TB
Diesel Range Organics	**	mg/kg	EPA 8015C		**

*Results are the average of 2 runs

**DRO Analyzed by TestAmerica in Nashville TN. See attached report.
TestAmerica Lab Number: 490-94934-1

End of Report
MLE/tab

Monte Z. Ellis

Laboratory Manager



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Rock Springs, WY 82901

Date: January 11, 2016
Request Number: 34822R
Date Received: 11/3/15
Matrix: Soil

REPORT OF ANALYSIS

Lab Number: P7557

Sample ID: B. W. Musser #15 Pit Side Wall 11/3/15 10:45am

	Result	Units	Method	Date Analyzed	Analyst
Nickel	10.7	mg/kg	SW846 EPA 3051/6020	12/23/2015	MLE
Copper	12.9	mg/kg	SW846 EPA 3051/6020	12/23/2015	MLE
Zinc	31.1	mg/kg	SW846 EPA 3051/6020	12/23/2015	MLE
Arsenic	1.39	mg/kg	SW846 EPA 3051/6020	12/23/2015	MLE
Selenium	0.208	mg/kg	SW846 EPA 3051/6020	12/23/2015	MLE
Silver	0.508	mg/kg	SW846 EPA 3051/6020	12/23/2015	MLE
Cadmium	0.265	mg/kg	SW846 EPA 3051/6020	12/23/2015	MLE
Barium	463	mg/kg	SW846 EPA 3051/6020	12/23/2015	MLE
Mercury	471*	mg/kg	EPA D7473	12/23/2015	MLE
Lead	16.1	mg/kg	SW846 EPA 3051/6020	12/23/2015	MLE
Total Chromium	29.2	mg/kg	SW846 EPA 3051/6020	12/23/2015	MLE
Chromium (VI)	< 0.1	mg/kg	EPA 7196A	11/9/2015	CB
Chromium (III)	29.2	mg/kg	Calculated (ttl.Cr-CrVI)	1/11/2016	TB
Soluble, Boron	0.34*	mg/L	Hot water ext./6020	11/10/2015	CB
pH	7.82	std. units	USDA 60-2,3/150.1	11/9/2015	DA
Conductivity	1,925	umhos/cm	USDA 60-2,3/120.1	11/9/2015	DA
Calcium	370*	mg/L	USDA 60-2,3/6010	11/12/2015	CB
Magnesium	53.2*	mg/L	USDA 60-2,3/6010	11/12/2015	CB
Sodium	545*	mg/L	USDA 60-2,3/6010	11/12/2015	CB
Sodium Absorption Ratio	7.02	Ratio	Calculated	11/13/15	TB
Diesel Range Organics	**	mg/kg	EPA 8015C		**

*Results are the average of 2 runs

**DRO Analyzed by TestAmerica in Nashville TN. See attached report.
TestAmerica Lab Number: 490-94934-1

End of Report
MLE/tab

Monte Z. Ellis

Laboratory Manager



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Tammy Fredrickson
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PO Box 458
Rock Springs, WY 82901

Date: January 11, 2016
Request Number: 34822R
Date Received: 11/3/15
Matrix: Soil

QUALITY CONTROL

	Lab Number	Result, mg/kg	Duplicate, mg/kg	RPD	RPD limit	Reference	% Recovery
Soluble Boron	P7557	0.34	0.34	0	20	ESI QC	108

	Reference	Expected	Value	% Recovery
Conductivity	QCI-027-12	756	758	100
pH	WAL QC	6.00	5.99	100
Chromium VI	Hach QC	0.50	0.50	100
Nickel	LRAA 1722	127	109	86
Copper	LRAA 1722	258	355	138
Zinc	LRAA 1722	173	172	99
Arsenic	LRAA 1722	161	154	96
Selenium	LRAA 1722	199	221	111
Silver	LRAA 1722	58	38	66
Cadmium	LRAA 1722	190	222	117
Barium	LRAA 1722	351	260	74
Mercury	QC P5702	0.057	0.057	100
Lead	LRAA 1722	138	123	89
Total Chromium	LRAA 1722	82.9	115	139

	Reference	% Recovery	Range
Calcium	ESI 1431121	103	70-130
Magnesium	ESI 1431121	103	70-130
Sodium	ESI 1431121	101	70-130

RPD: Relative % difference.

**DRO Analyzed by TestAmerica in Nashville TN. See attached report.

End of QC Report
MLE/tab

Monte Z. Ellis

Laboratory Manager



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Tammy Fredrickson
Wexpro
PO Box 458
Rock Springs, WY 82901

Date: January 11, 2016
Request Number: 34822R
Date Received: 11/3/15
Matrix: Soil

BTEX, GRO, DRO and PAH analyzed by TestAmerica Labs in Nashville TN. The following pages apply to the samples listed below. Complete TestAmerica report is available upon request.

WAL Lab Number	Test America Lab Number	Customer Sample ID
P7556	490-91367-1 (BTEX, GRO, PAH)	B. W. Musser #15 Pit Floor 11/3/15 10:45am
P7556	490-94934-1 DRO	B. W. Musser #15 Pit Floor 11/3/15 10:45am
P7557	490-91367-2 (BTEX, GRO, PAH)	B. W. Musser #15 Pit Side Wall 11/3/15 10:45am
P7577	490-94934-2 DRO	B. W. Musser #15 Pit Side Wall 11/3/15 10:45am



Laboratory Manager



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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Tel: (615)726-0177

TestAmerica Job ID: 490-91367-1
Client Project/Site: 34822R

For:
Wyoming Analytical Laboratories Inc
1660 Harrison St
Laramie, Wyoming 82070

Attn: Monte Ellis

Roxanne Cisneros

Authorized for release by:
11/23/2015 2:12:39 PM

Roxanne Cisneros, Senior Project Manager
(615)301-5761
roxanne.cisneros@testamericainc.com

LINKS

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results through
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Have a Question?



**Ask
The
Expert**

Visit us at:
www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Definitions/Glossary

Client: Wyoming Analytical Laboratories Inc
Project/Site: 34822R

TestAmerica Job ID: 490-91367-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
"	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

TestAmerica Nashville

11/23/2015

Client Sample Results

Client: Wyoming Analytical Laboratories Inc
Project/Site: 34822R

TestAmerica Job ID: 490-91367-1

Client Sample ID: P7556

Lab Sample ID: 490-91367-1

Date Collected: 11/03/15 10:45

Matrix: Soil

Date Received: 11/05/15 12:45

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.00197		0.00183		mg/Kg		11/08/15 09:56	11/10/15 04:49	1
Ethylbenzene	ND		0.00183		mg/Kg		11/08/15 09:56	11/10/15 04:49	1
Toluene	0.00217		0.00183		mg/Kg		11/08/15 09:56	11/10/15 04:49	1
Xylenes, Total	ND		0.00548		mg/Kg		11/08/15 09:56	11/10/15 04:49	1
GRO (C6-C10)	ND		0.386		mg/Kg		11/08/15 09:56	11/10/15 04:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		70 - 130	11/08/15 09:56	11/10/15 04:49	1
Dibromofluoromethane (Surr)	105		70 - 130	11/08/15 09:56	11/10/15 04:49	1
1,2-Dichloroethane-d4 (Surr)	102		70 - 130	11/08/15 09:56	11/10/15 04:49	1
Toluene-d8 (Surr)	111		70 - 130	11/08/15 09:56	11/10/15 04:49	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.0658		mg/Kg		11/12/15 11:05	11/20/15 17:01	1
Acenaphthylene	ND		0.0658		mg/Kg		11/12/15 11:05	11/20/15 17:01	1
Anthracene	ND		0.0658		mg/Kg		11/12/15 11:05	11/20/15 17:01	1
Benzo[a]anthracene	ND		0.0658		mg/Kg		11/12/15 11:05	11/20/15 17:01	1
Benzo[a]pyrene	ND		0.0658		mg/Kg		11/12/15 11:05	11/20/15 17:01	1
Benzo[b]fluoranthene	ND		0.0658		mg/Kg		11/12/15 11:05	11/20/15 17:01	1
Benzo[g,h,i]perylene	ND		0.0658		mg/Kg		11/12/15 11:05	11/20/15 17:01	1
Benzo[k]fluoranthene	ND		0.0658		mg/Kg		11/12/15 11:05	11/20/15 17:01	1
Chrysene	ND		0.0658		mg/Kg		11/12/15 11:05	11/20/15 17:01	1
Dibenz[a,h]anthracene	ND		0.0658		mg/Kg		11/12/15 11:05	11/20/15 17:01	1
Fluoranthene	ND		0.0658		mg/Kg		11/12/15 11:05	11/20/15 17:01	1
Fluorene	ND		0.0658		mg/Kg		11/12/15 11:05	11/20/15 17:01	1
Indeno[1,2,3-cd]pyrene	ND		0.0658		mg/Kg		11/12/15 11:05	11/20/15 17:01	1
Naphthalene	ND		0.0658		mg/Kg		11/12/15 11:05	11/20/15 17:01	1
Phenanthrene	ND		0.0658		mg/Kg		11/12/15 11:05	11/20/15 17:01	1
Pyrene	ND		0.0658		mg/Kg		11/12/15 11:05	11/20/15 17:01	1
1-Methylnaphthalene	ND		0.0658		mg/Kg		11/12/15 11:05	11/20/15 17:01	1
2-Methylnaphthalene	ND		0.0658		mg/Kg		11/12/15 11:05	11/20/15 17:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	71		27 - 120	11/12/15 11:05	11/20/15 17:01	1
Terphenyl-d14 (Surr)	75		13 - 120	11/12/15 11:05	11/20/15 17:01	1
2-Fluorobiphenyl (Surr)	67		29 - 120	11/12/15 11:05	11/20/15 17:01	1

TestAmerica Nashville

11/23/2015

Client Sample Results

Client: Wyoming Analytical Laboratories Inc
Project/Site: 34822R

TestAmerica Job ID: 490-94934-1

Client Sample ID: P7556

Lab Sample ID: 490-94934-1

Date Collected: 11/03/15 10:40

Matrix: Solid

Date Received: 12/30/15 09:28

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	25.6	H	4.78		mg/Kg		12/31/15 11:26	01/02/16 23:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl (Sum)	69		50 - 150	12/31/15 11:26	01/02/16 23:33	1

TestAmerica Nashville

1/7/2016

Client Sample Results

Client: Wyoming Analytical Laboratories Inc
Project/Site: 34822R

TestAmerica Job ID: 490-91367-1

Client Sample ID: P7557

Lab Sample ID: 490-91367-2

Date Collected: 11/03/15 10:45

Matrix: Soil

Date Received: 11/05/15 12:45

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00193		mg/Kg	-	11/08/15 09:56	11/10/15 05:20	1
Ethylbenzene	ND		0.00193		mg/Kg	-	11/08/15 09:56	11/10/15 05:20	1
Toluene	ND		0.00193		mg/Kg	-	11/08/15 09:56	11/10/15 05:20	1
Xylenes, Total	ND		0.00580		mg/Kg	-	11/08/15 09:56	11/10/15 05:20	1
GRO (C6-C10)	ND		0.387		mg/Kg	-	11/08/15 09:56	11/10/15 05:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		70 - 130	11/08/15 09:56	11/10/15 05:20	1
Dibromofluoromethane (Surr)	107		70 - 130	11/08/15 09:56	11/10/15 05:20	1
1,2-Dichloroethane-d4 (Surr)	104		70 - 130	11/08/15 09:56	11/10/15 05:20	1
Toluene-d8 (Surr)	111		70 - 130	11/08/15 09:56	11/10/15 05:20	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.0665		mg/Kg	-	11/12/15 11:05	11/20/15 09:15	1
Acenaphthylene	ND		0.0665		mg/Kg	-	11/12/15 11:05	11/20/15 09:15	1
Anthracene	ND		0.0665		mg/Kg	-	11/12/15 11:05	11/20/15 09:15	1
Benzo[a]anthracene	ND		0.0665		mg/Kg	-	11/12/15 11:05	11/20/15 09:15	1
Benzo[a]pyrene	ND		0.0665		mg/Kg	-	11/12/15 11:05	11/20/15 09:15	1
Benzo[b]fluoranthene	ND		0.0665		mg/Kg	-	11/12/15 11:05	11/20/15 09:15	1
Benzo[g,h,i]perylene	ND		0.0665		mg/Kg	-	11/12/15 11:05	11/20/15 09:15	1
Benzo[k]fluoranthene	ND		0.0665		mg/Kg	-	11/12/15 11:05	11/20/15 09:15	1
Chrysene	ND		0.0665		mg/Kg	-	11/12/15 11:05	11/20/15 09:15	1
Dibenz(a,h)anthracene	ND		0.0665		mg/Kg	-	11/12/15 11:05	11/20/15 09:15	1
Fluoranthene	ND		0.0665		mg/Kg	-	11/12/15 11:05	11/20/15 09:15	1
Fluorene	ND		0.0665		mg/Kg	-	11/12/15 11:05	11/20/15 09:15	1
Indeno[1,2,3-cd]pyrene	ND		0.0665		mg/Kg	-	11/12/15 11:05	11/20/15 09:15	1
Naphthalene	ND		0.0665		mg/Kg	-	11/12/15 11:05	11/20/15 09:15	1
Phenanthrene	ND		0.0665		mg/Kg	-	11/12/15 11:05	11/20/15 09:15	1
Pyrene	ND		0.0665		mg/Kg	-	11/12/15 11:05	11/20/15 09:15	1
1-Methylnaphthalene	ND		0.0665		mg/Kg	-	11/12/15 11:05	11/20/15 09:15	1
2-Methylnaphthalene	ND		0.0665		mg/Kg	-	11/12/15 11:05	11/20/15 09:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	67		27 - 120	11/12/15 11:05	11/20/15 09:15	1
Terphenyl-d14 (Surr)	71		13 - 120	11/12/15 11:05	11/20/15 09:15	1
2-Fluorobiphenyl (Surr)	64		29 - 120	11/12/15 11:05	11/20/15 09:15	1

TestAmerica Nashville

11/23/2015

Client Sample Results

Client: Wyoming Analytical Laboratories Inc
Project/Site: 34822R

TestAmerica Job ID: 490-94934-1

Client Sample ID: P7557

Lab Sample ID: 490-94934-2

Date Collected: 11/03/15 10:45

Matrix: Solid

Date Received: 12/30/15 09:28

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	75.5	H	4.71		mg/Kg		12/31/15 11:26	01/02/16 23:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl (Sum)	88		50 - 150				12/31/15 11:26	01/02/16 23:48	1

TestAmerica Nashville

1/7/2016

Certification Summary

Client: Wyoming Analytical Laboratories Inc
Project/Site: 34822R

TestAmerica Job ID: 490-91367-1

Laboratory: TestAmerica Nashville

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	A2LA		NA: NELAP & A2LA	12-31-15
A2LA	ISO/IEC 17025		0453.07	12-31-15
Alaska (UST)	State Program	10	UST-087	07-24-16
Arizona	State Program	9	AZ0473	05-05-16
Arkansas DEQ	State Program	6	88-0737	04-25-16
California	State Program	9	2938	10-31-16
Connecticut	State Program	1	PH-0220	12-31-15
Florida	NELAP	4	E87358	06-30-16
Georgia	State Program	4	N/A	06-30-16
Illinois	NELAP	5	200010	12-09-15 *
Iowa	State Program	7	131	04-01-16
Kansas	NELAP	7	E-10229	01-31-16
Kentucky (UST)	State Program	4	19	06-30-16
Kentucky (WW)	State Program	4	90038	12-31-15
Louisiana	NELAP	6	30613	06-30-16
Maine	State Program	1	TN00032	11-03-17
Maryland	State Program	3	316	03-31-16
Massachusetts	State Program	1	M-TN032	06-30-16
Minnesota	NELAP	5	047-999-345	12-31-16
Mississippi	State Program	4	N/A	06-30-16
Montana (UST)	State Program	8	NA	02-24-20
Nevada	State Program	9	TN00032	07-31-16
New Hampshire	NELAP	1	2963	10-09-16
New Jersey	NELAP	2	TN965	11-30-15 *
New York	NELAP	2	11342	03-31-16
North Carolina (WW/SW)	State Program	4	387	12-31-15
North Dakota	State Program	8	R-146	06-30-16
Ohio VAP	State Program	5	CL0033	07-10-17
Oklahoma	State Program	6	9412	06-31-16
Oregon	NELAP	10	TN200001	04-27-16
Pennsylvania	NELAP	3	68-00585	06-30-16
Rhode Island	State Program	1	LAO00268	12-30-15
South Carolina	State Program	4	84009 (001)	02-28-16
South Carolina (Do Not Use - DW)	State Program	4	84009 (002)	12-16-17
Tennessee	State Program	4	2008	02-23-17
Texas	NELAP	6	T104704077	08-31-16
USDA	Federal		S-48469	10-30-16
Utah	NELAP	8	TN00032	07-31-16
Virginia	NELAP	3	460152	06-14-16
Washington	State Program	10	C789	07-19-16
West Virginia DEP	State Program	3	219	02-28-16
Wisconsin	State Program	5	998020430	08-31-16
Wyoming (UST)	A2LA	8	453.07	12-31-15

* Certification renewal pending - certification considered valid.

TestAmerica Nashville

11/23/2015

Facility #11637

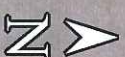
historic imagery-2006
pit appears to have been closed between 2006 & 2011

Legend
Feature 1

BW Musser 15

40.933128, -108.302919

X proposed sampling points



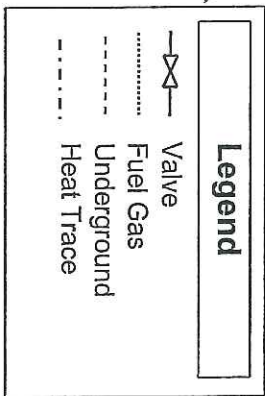
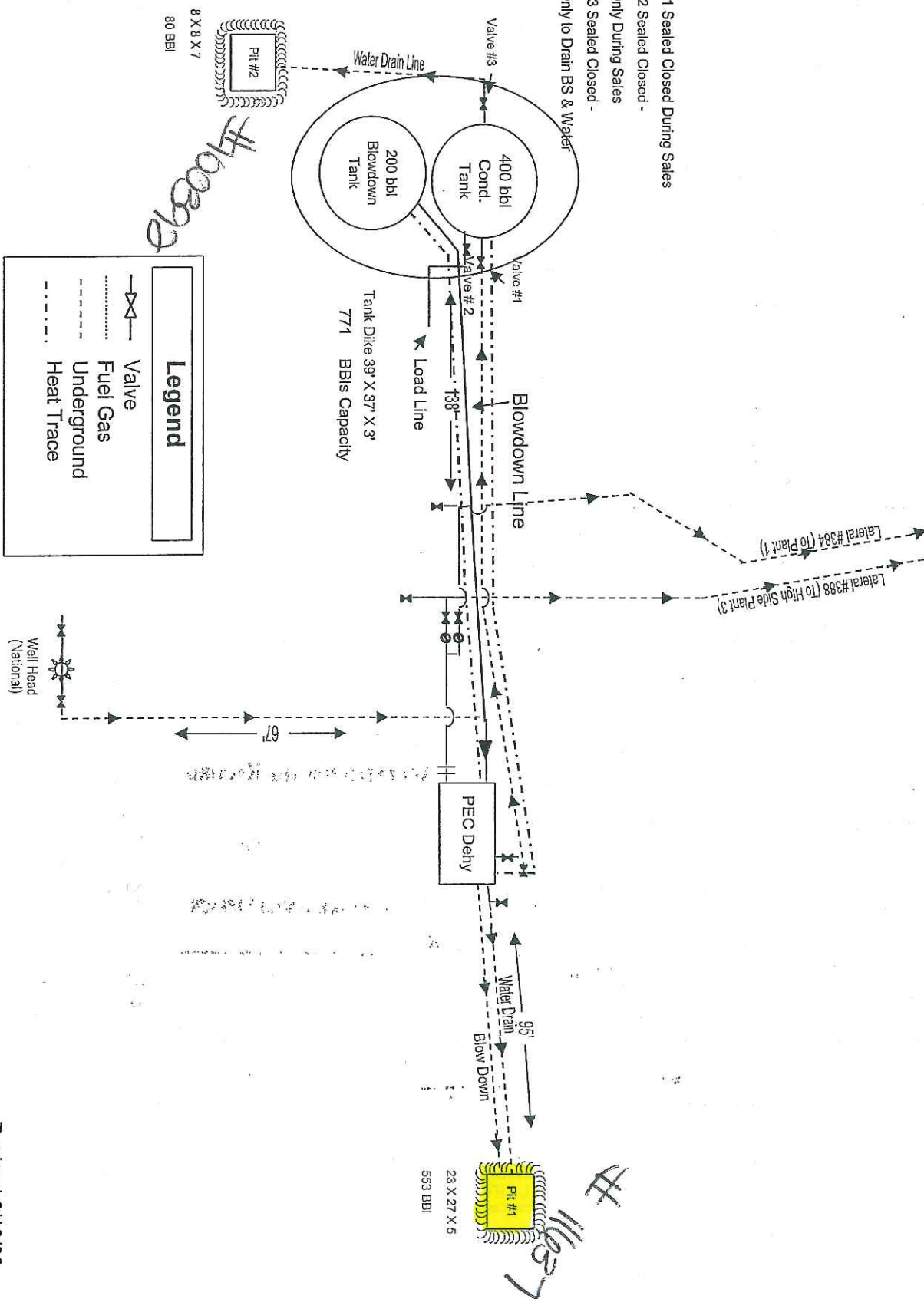
200 ft

Google earth

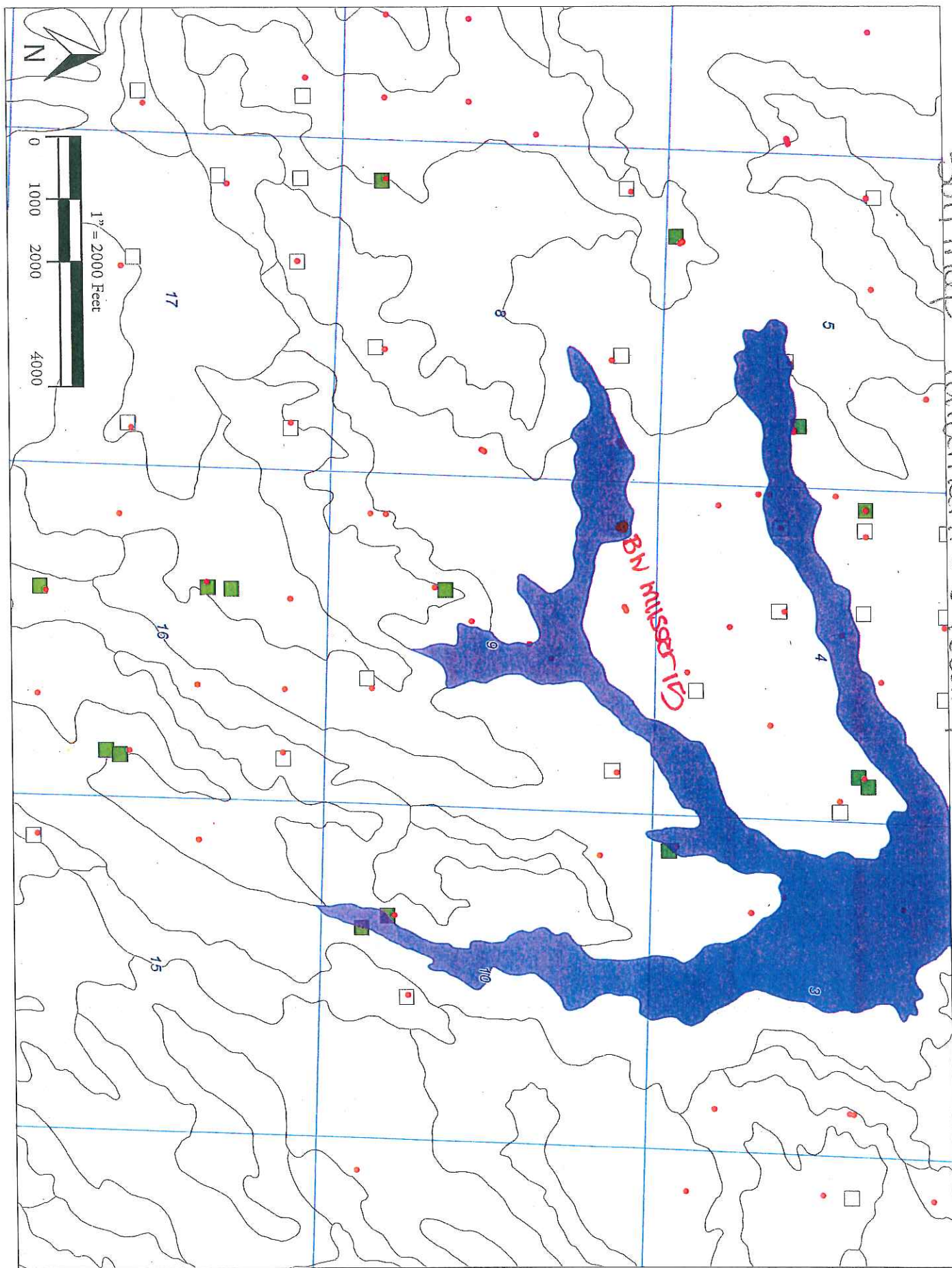
Image USDA Farm Service Agency



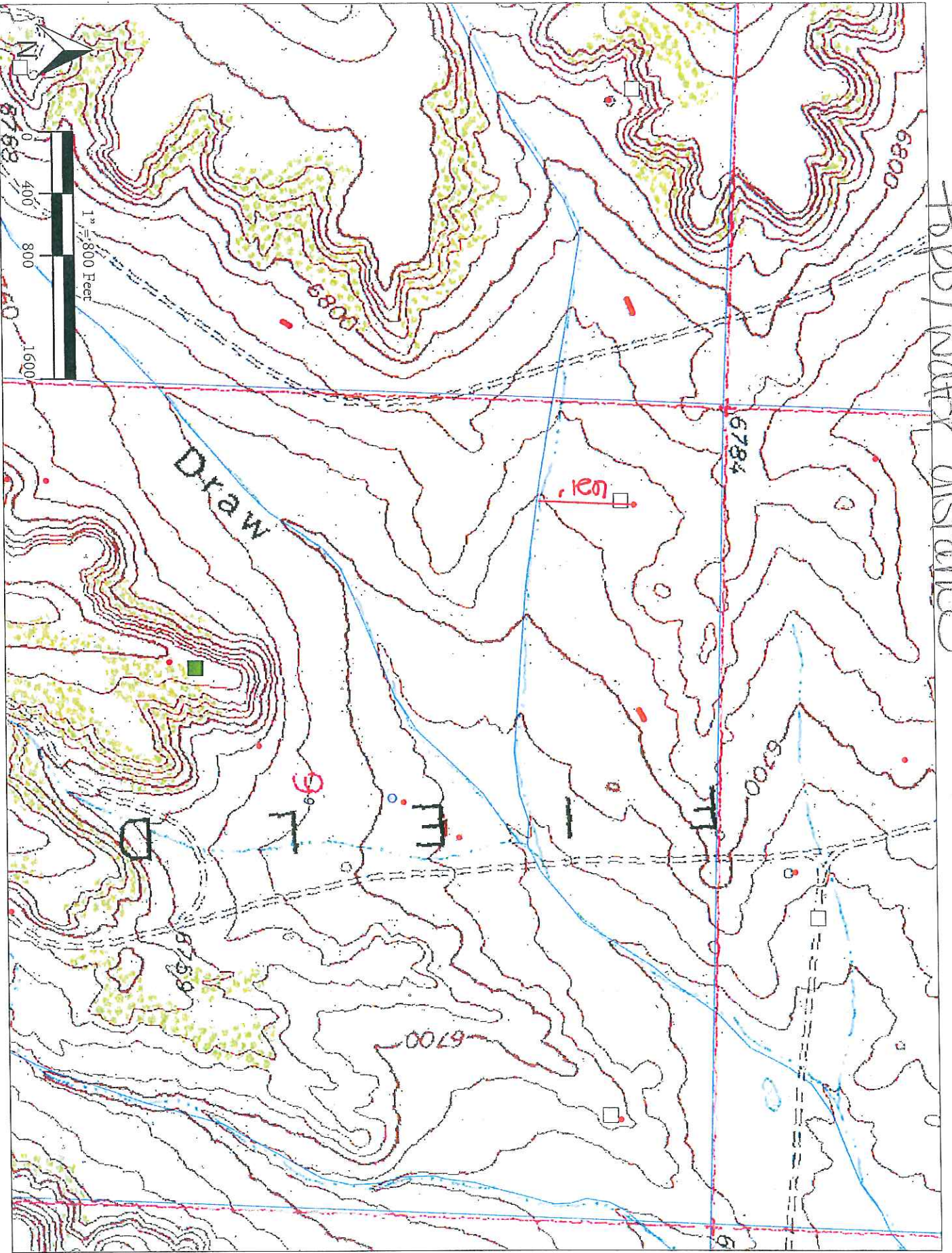
Valve #1 Sealed Closed During Sales
 Valve #2 Sealed Closed -
 Open Only During Sales
 Valve #3 Sealed Closed -
 Open Only to Drain BS & Water



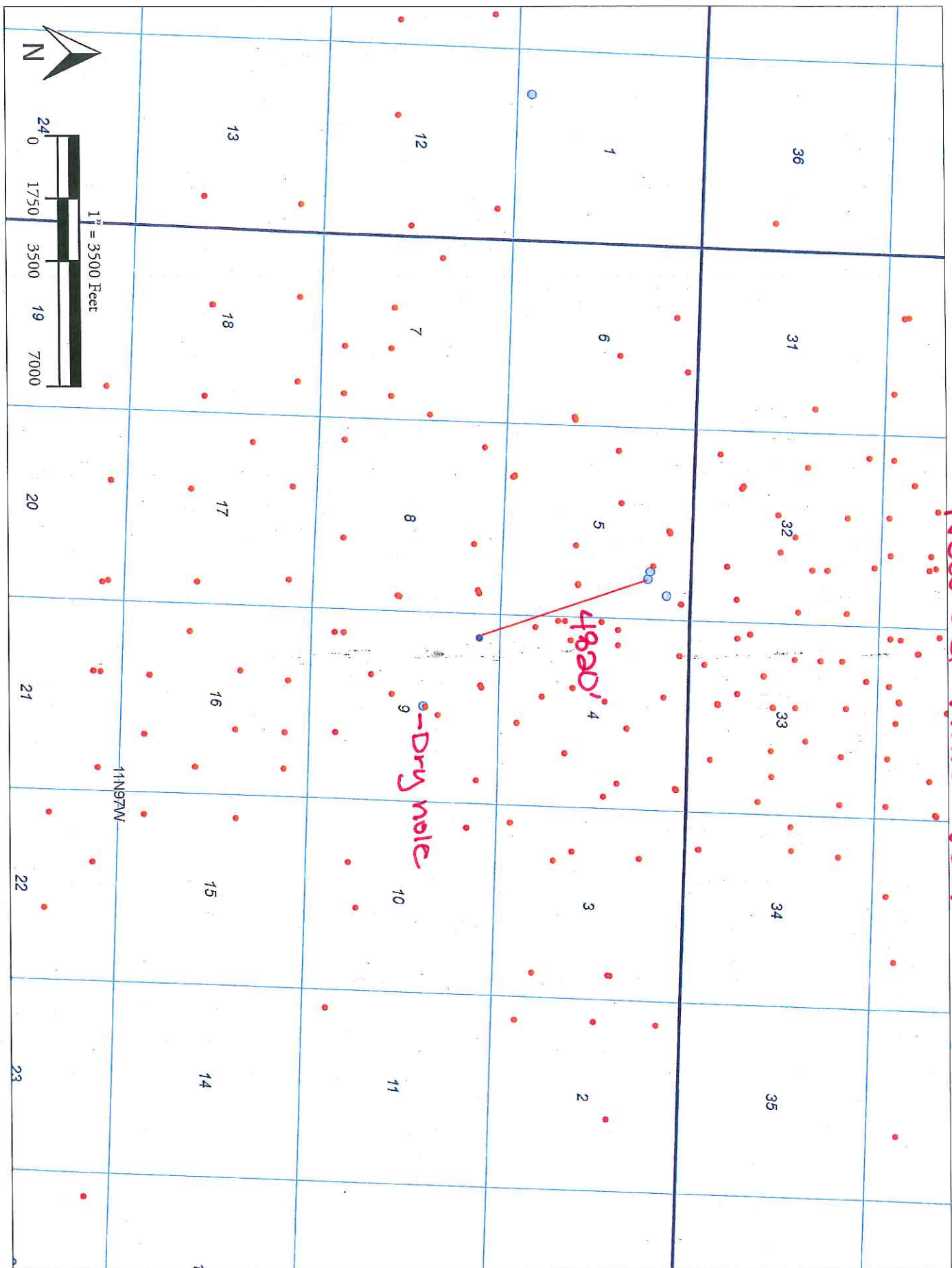
Soil map - Talamanca's Ibarra



topo/water distance



Nearest water well

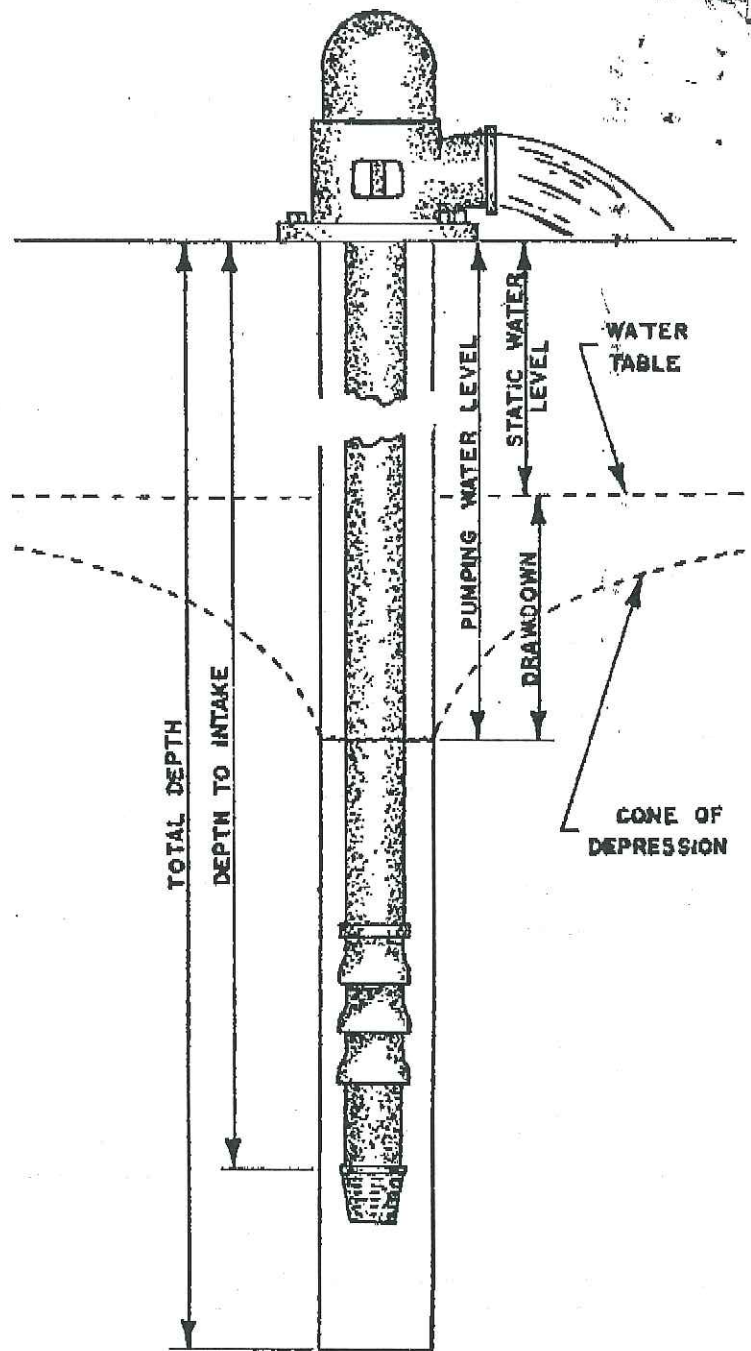


PUMP INSTALLATION REPORT

Pump Type SUBMERSIBLE
 Make GRUNDFOS
 Powered by HATACHI HP 15
 Pump Model No. SP44DS
 Motor Serial No. _____
 Date Installed 1-22-90
 Pump Intake Depth 766'
 Remarks _____

WELL TEST DATA WITH PERMANENT PUMP

Date Tested 1-22-90
 Static Water Level Prior to Test 639'
 Length of Test 1 Hours
 Sustained yield (Metered) 37 GPM
 Pumping Water Level 761'
 Remarks _____



CONTRACTORS STATEMENT

The undersigned, being duly sworn upon oath, deposes and says that he is the contractor of the well or pump installation described hereon; that he has read the statement made hereon; knows the content thereof, and that the same is true of his own knowledge.

Signature Howard E. Ritchie License No. 1093

State of Colorado, County of _____ SS

Subscribed and sworn to before me this _____ day of _____, 19 _____.

My Commission expires: _____, 19 _____.

Notary Public _____

FORM TO BE MADE OUT IN QUADRUPLICATE: WHITE FORM must be an original copy on both sides and signed. WHITE AND GREEN copies must be filed with the State Engineer. PINK COPY is for the Owner and YELLOW COPY is for the Driller.

arsenic sample map

MUSSEY 35 (<0.001)
Geary Ave

MUSSEY 19 (1.36, 1.60, 1.41, 1.71, 2.11)

MUSSEY 34 (<0.001)

NOV 2 (3.81, 5.41, 3.12, 0.022, 0.025, 0.016, 0.018)

BW Musser 15

MUSSEY 15 (1.92, 1.37, 1.83, 1.70, 1.39)

MUSSEY 10 (1.67, 1.08, 0.83, 1.89, 2.0)

MUSSEY 6 (1.96, <0.1, <0.1, <0.1, <0.1)

MUSSEY 17 (7.02, 6.56, 7.51, 7.54, 7.15)

FACE 2 (0.3)

- Legend**
- 40.967928, -108.312517
 - JC DONNELL
 - JC DONNELL 8

75

4

3000 ft

