

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

**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: <u>66571</u>	Contact Name and Telephone: <u>Joan Proulx</u>
Name of Operator: <u>OXY USA WTP LP</u>	No: <u>(970)263-3641</u>
Address: <u>760 Horizon Drive</u>	Fax: <u>(970)263-3694</u>
City: <u>Grand Junction</u> State: <u>CO</u> Zip: <u>81506</u>	

API Number: _____	County: <u>Garfield</u>
Facility Name: <u>Pond 10 N, Pond 10 S</u>	Facility Number: <u>414396, 291946</u>
Well Name: _____	Well Number: _____
Location: (QtrQtr, Sec, Twp, Rng, Meridian): <u>SESW, Sec. 5, T7S, R97W, 6PM</u>	Latitude: <u>39.46841</u> Longitude: <u>-108.24461</u>

**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.): Non-crop land rangeland

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Happle very channery sandy loam, 3-12% slopes

Potential receptors (water wells within 1/4 mi, surface waters, etc.): Nearest water well ~1012' to the north (upgradient), nearest pond is 307' to the south, nearest stream is ~356' to the west.

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

Impacted Media (check):	Extent of Impact:	How Determined:
<input checked="" type="checkbox"/> Soils	<u>All impacted material has been disposed of or remediated on site.</u>	<u>Field screenings and laboratory analytical</u>
<input type="checkbox"/> Vegetation	_____	_____
<input type="checkbox"/> Groundwater	_____	_____
<input type="checkbox"/> Surface Water	_____	_____

**REMEDATION WORKPLAN**

Describe initial action taken (if previously provided, refer to that form or document):  
 Please reference attached Closure Narrative.

Describe how source is to be removed:  
 Please reference attached Closure Narrative.

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.:  
 Please reference attached Closure Narrative.



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

Page 2  
**REMEDIATION WORKPLAN (Cont.)**

OGCC Employee: \_\_\_\_\_

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

Please see attached narrative.

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.

Please see attached narrative.

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:

Please see attached narrative.

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

Please see attached narrative.

**IMPLEMENTATION SCHEDULE**

Date Site Investigation Began: 03/15/2014 Date Site Investigation Completed: 06/15/2014 Date Remediation Plan Submitted: 12/31/2013  
Remediation Start Date: 03/15/2014 Anticipated Completion Date: 07/01/2014 Actual Completion Date: 06/20/2014

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

Print Name: Blair Rollins Signed: *Blair Rollins*  
Title: Regulatory Consultant Date: 7/10/14

OGCC Approved: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

OXY USA WTP LP  
Operator # 66571  
Pond 10 North and 10 South (Facility IDs 414396 and 291946)  
REM#8134, Spill Tracking # 2146956

## **Form 27 Closure Narrative**

### **Describe Initial Action Taken:**

Oxy is submitting this Form 27 as notice of final closure of Ponds 10 N and 10 S, and the associated spill that occurred within those ponds. Please reference REM # 8134, and spill tracking # 2146956. Oxy removed all above liner fluids and solids from the pond; the fluids were reintroduced into Oxy's fluids system, while the solids were stabilized with sawdust and transported offsite for disposal. A visual inspection of the pond liner was conducted prior to removal of the liner. As outlined in the Form 19 submitted to the COGCC on 08/22/2013, there was one known liner anomaly located at the equalization line between the two ponds. Oxy was unable to visually locate any additional anomalies in the liner prior to liner removal. After the liner was removed Oxy conducted a visual inspection & field screening of the pond bottom and walls in order to identify any potential impacts below the liner. An independent consultant oversaw the removal of all impacted material. Following removal and remediation, confirmation samples of the pit bottoms, walls, and remediated material were collected and sent to a laboratory to be analyzed for compliance with COGCC Table 910-1 standards. Please reference attached sample narrative for all samples collected and analytical results. Oxy has submitted and received approval for a Form 15 permit and a Form 2A oil and gas location assessment to support the installation of an expanded produced water storage facility located in the previous footprint.

### **Describe how source is to be removed:**

All impacted material beneath the liner was excavated and remediated on site through aeration and stabilization. The effectiveness of the excavation efforts and removed impacts were verified through sample collection and laboratory analysis conducted in accordance with the COGCC Table 910-1 standards. All confirmation samples were found to be below COGCC 910-1 standards with the exception of SAR and Arsenic. Arsenic exceedances will be addressed in the previously submitted attached Form 4. Exceedances in SAR will be capped upon final pad reclamation, as the existing Ponds 10N and 10S footprint will be utilized for the new Pond 10. Following aeration and confirmation sampling, all remediated material was returned to the excavation to serve as soil bed material for the installation of the new pond 10.

### **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.:**

All impacted material beneath the liner was excavated and remediated on site through aeration and stabilization. Confirmation samples of the pond bottoms, walls, and remediated material were collected and sent to a laboratory for analysis. All confirmation samples were found to be below COGCC 910-1 standards with the exception of SAR and Arsenic. Arsenic exceedances will be addressed in the previously submitted attached Form 4. Exceedances in SAR will be capped upon final pad reclamation, as the existing Ponds 10N and 10S footprint will be utilized for the new Pond 10. The material was

OXY USA WTP LP  
Operator # 66571  
Pond 1D North and 10 South (Facility IDs 414396 and 291946)  
REM#8134, Spill Tracking # 2146956

returned to the excavation to serve as soil bed material for the installation of the new pond 10. A five point composite sample was collected of the liner and analyzed to support off-site disposal. The liner was disposed of at ECDC disposal facility in Utah.

**If Groundwater has been impacted, describe proposed monitoring plan:**

Four monitoring wells were placed around Ponds 10 N and 10 S to support the new Pond 10 construction and Form 28 submittal. One up-gradient monitoring well to establish background values, and three down-gradient to aid in groundwater monitoring in the area. During the drilling of these wells, a confining layer of clay was encountered below the elevation of the pond bottom, but before groundwater was reached. MW-4 is located down-gradient and directly south of the ponds. MW-4 exceeded COGCC table 910-1 standards for chlorides, sulfates, and total dissolved solids as they exceeded 1.25 times background concentrations; however they did not exceed COGCC Table 910-1 standards for organics or any physical properties. MW-4 and MW-3 (background location) are approximately the same depths (approximately 50 feet deep), however MW-4 is between 30 feet to 40 feet lower in elevation than MW-3. As all of the monitoring wells contained a confining clay layer before groundwater was reached, and because the elevated values of chlorides, sulfates, and total dissolved solids found in MW-4 were the only COGCC Table 910-1 exceedences without any accompanying organics or physical properties, it seems likely that MW-4 is reaching different formation water, and therefore does not indicate groundwater contamination. Oxy will continue to monitor these wells quarterly.

**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.**

Following remediation and closure of Pond 10 North and Pond 10 South, Oxy has utilized the area for construction of an expanded produced water pond. Oxy has submitted and received COGCC approval for a Form 15 Pit permit and a Form 2A to permit the location as a produced water storage facility. Oxy will monitor the location for noxious weeds, stormwater and erosion control.

**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?**

Further site investigation is not required. Please find all analytical results, sampling maps, and supporting documentation attached. Oxy has provided and received COGCC approval for a Form 15 Pit permit and a Form 2A to permit the location as a produced water storage facility.

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

All impacted material beneath the liner was excavated and remediated on site through aeration and stabilization. The material was returned to the excavation to serve as soil bed material for the

State of Colorado  
Oil and Gas Conservation Commission

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



DE	ET	OE	ES
Document Number: <b>400636681</b>			
Date Received:			

**SUNDRY NOTICE**

Submit a signed original. This form is to be used for general, technical and environmental sundry information. For proposed or completed operations, describe in full in Comments or provide as an attachment. Identify Well by API Number; identify Oil and Gas Location by Location ID Number; identify other Facility by Facility ID Number.

OGCC Operator Number: 66571 Contact Name Joan Proulx  
 Name of Operator: OXY USA WTP LP Phone: (970) 263-3641  
 Address: P O BOX 27757 Fax: (970) 263-3694  
 City: HOUSTON State: TX Zip: 77227 Email: Joan\_Proulx@oxy.com

Complete the Attachment  
Checklist

OP OGCC

API Number : 05- 045 00 OGCC Facility ID Number: 414396  
 Well/Facility Name: Pond Well/Facility Number: 10  
 Location QtrQtr: T 83A Section: 5 Township: 7S Range: 97W Meridian: 6  
 County: GARFIELD Field Name: GRAND VALLEY  
 Federal, Indian or State Lease Number: \_\_\_\_\_

Survey Plat		
Directional Survey		
Srvc Eqpmt Diagram		
Technical Info Page		
Other		

**CHANGE OF LOCATION OR AS BUILT GPS REPORT**

- Change of Location \*     As-Built GPS Location Report     As-Built GPS Location Report with Survey

\* Well location change requires new plat. A substantive surface location change may require new Form 2A.

**SURFACE LOCATION GPS DATA** Data must be provided for Change of Surface Location and As Built Reports.

Latitude \_\_\_\_\_ PDOP Reading \_\_\_\_\_ Date of Measurement \_\_\_\_\_  
 Longitude \_\_\_\_\_ GPS Instrument Operator's Name \_\_\_\_\_

**LOCATION CHANGE (all measurements in Feet)**

Well will be: \_\_\_\_\_ (Vertical, Directional, Horizontal)

Change of Surface Footage From Exterior Section Lines:

FNL/FSL		FEL/FWL	
<input type="text" value="327"/>	<input type="text" value="FSL"/>	<input type="text" value="2295"/>	<input type="text" value="FWL"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Change of Surface Footage To Exterior Section Lines:

Current Surface Location From QtrQtr  Sec  Twp  Range  Meridian   
 New Surface Location To QtrQtr  Sec  Twp  Range  Meridian

Change of Top of Productive Zone Footage From Exterior Section Lines:

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Change of Top of Productive Zone Footage To Exterior Section Lines:

Current Top of Productive Zone Location From Sec  Twp  Range   
 New Top of Productive Zone Location To Sec  Twp  Range

Change of Bottomhole Footage From Exterior Section Lines:

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Change of Bottomhole Footage To Exterior Section Lines:

Current Bottomhole Location Sec  Twp  Range  \*\* attach deviated drilling plan  
 New Bottomhole Location Sec  Twp  Range

Is location in High Density Area? \_\_\_\_\_

Distance, in feet, to nearest building \_\_\_\_\_, public road: \_\_\_\_\_, above ground utility: \_\_\_\_\_, railroad: \_\_\_\_\_,  
 property line: \_\_\_\_\_, lease line: \_\_\_\_\_, well in same formation: \_\_\_\_\_

Ground Elevation \_\_\_\_\_ feet Surface owner consultation date \_\_\_\_\_

**OTHER CHANGES**

REMOVE FROM SURFACE BOND Signed surface use agreement is a required attachment

CHANGE OF WELL, FACILITY OR OIL & GAS LOCATION NAME OR NUMBER

From: Name POND Number 10 Effective Date: \_\_\_\_\_

To: Name \_\_\_\_\_ Number \_\_\_\_\_

ABANDON PERMIT: Permit can only be abandoned if the permitted operation has NOT been conducted. Field inspection will be conducted to verify site status.

WELL: Abandon Application for Permit-to-Drill (Form2) – Well API Number \_\_\_\_\_ has not been drilled.

PIT: Abandon Earthen Pit Permit (Form 15) – COGCC Pit Facility ID Number \_\_\_\_\_ has not been constructed (Permitted and constructed pit requires closure per Rule 905)

CENTRALIZED E&P WASTE MANAGEMENT FACILITY: Abandon Centralized E&P Waste Management Facility Permit (Form 28) – Facility ID Number \_\_\_\_\_ has not been constructed (Constructed facility requires closure per Rule 908)

OIL & GAS LOCATION ID Number: \_\_\_\_\_

Abandon Oil & Gas Location Assessment (Form 2A) – Location has not been constructed and site will not be used in the future.

Keep Oil & Gas Location Assessment (Form 2A) active until expiration date. This site will be used in the future.

Surface disturbance from Oil and Gas Operations must be reclaimed per Rule 1003 and Rule 1004.

REQUEST FOR CONFIDENTIAL STATUS

DIGITAL WELL LOG UPLOAD

DOCUMENTS SUBMITTED Purpose of Submission: \_\_\_\_\_

**RECLAMATION**

**INTERIM RECLAMATION**

Interim Reclamation will commence approximately \_\_\_\_\_

Per Rule 1003.e.(3) operator shall submit Sundry Notice reporting interim reclamation is complete and site is ready for inspection when vegetation reaches 80% coverage.

Interim reclamation complete, site ready for inspection.

Per Rule 1003.e(3) describe interim reclamation procedure in Comments below or provide as an attachment and attach required location photographs.

Field inspection will be conducted to document Rule 1003.e. compliance

**FINAL RECLAMATION**

Final Reclamation will commence approximately \_\_\_\_\_

Per Rule 1004.c.(4) operator shall submit Sundry Notice reporting final reclamation is complete and site is ready for inspection when vegetation reaches 80% coverage.

Final reclamation complete, site ready for inspection. Per Rule 1004.c(4) describe final reclamation procedure in Comments below or provide as an attachment.

Field inspection will be conducted to document Rule 1004.c. compliance

Comments:

**ENGINEERING AND ENVIRONMENTAL WORK**

NOTICE OF CONTINUED TEMPORARILY ABANDONED STATUS

Indicate why the well is temporarily abandoned and describe future plans for utilization in the COMMENTS box below or provide as an attachment, as required by Rule 319.b.(3).

Date well temporarily abandoned \_\_\_\_\_ Has Production Equipment been removed from site? \_\_\_\_\_

Mechanical Integrity Test (MIT) required if shut in longer than 2 years. Date of last MIT \_\_\_\_\_

SPUD DATE: \_\_\_\_\_

**TECHNICAL ENGINEERING AND ENVIRONMENTAL WORK**

Details of work must be described in full in the COMMENTS below or provided as an attachment.

NOTICE OF INTENT Approximate Start Date \_\_\_\_\_

REPORT OF WORK DONE Date Work Completed 06/20/2014

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Intent to Recomplete (Form 2 also required) | <input type="checkbox"/> Request to Vent or Flare   | <input type="checkbox"/> E&P Waste Mangement Plan      |
| <input type="checkbox"/> Change Drilling Plan                        | <input type="checkbox"/> Repair Well  | <input type="checkbox"/> Beneficial Reuse of E&P Waste |
| <input type="checkbox"/> Gross Interval Change                       | <input type="checkbox"/> Rule 502 variance requested. Must provide detailed info regarding request. |  |
| <input checked="" type="checkbox"/> Other <u>See Below</u>           | <input type="checkbox"/> Status Update/Change of Remediation Plans for Spills and Releases          |  |

**COMMENTS:**

Oxy is submiting this Form 4 Sundry as notice of a different Arsenic value in accordance with the COGCC's Table 910-1 Footnote 1; and as outlined in the COGCC's posted frequently asked questions #31. Please reference Oxy's Form 27 closure documentation REM #8134.

**H2S REPORTING**

Data Fields in this section are intended to document Sample and Location Data associated with the collection of a Gas Sample that is submitted for Laboratory Analysis.

Gas Analysis Report must be attached.

H2S Concentration: \_\_\_\_\_ in ppm (parts per million) Date of Measurement or Sample Collection \_\_\_\_\_

Description of Sample Point:

\_\_\_\_\_

Absolute Open Flow Potential \_\_\_\_\_ in CFPD (cubic feet per day)

Description of Release Potential and Duration (If flow is not open to the atmosphere, identify the duration in which the container or pipeline would likely be opened for servicing operations.):

\_\_\_\_\_

Distance to nearest occupied residence, school, church, park, school bus stop, place of business, or other areas where the public could reasonably be expected to frequent: \_\_\_\_\_

Distance to nearest Federal, State, County, or municipal road or highway owned and principally maintained for public use: \_\_\_\_\_

COMMENTS:

[Empty comment box]

**Best Management Practices**

**No BMP/COA Type**

**Description**

No BMP/COA Type	Description

**Operator Comments:**

Oxy has completed the reclamation and conversion of the above-mentioned production ponds. In accordance with the COGCC Table 910-1 footnote 1 and frequently asked question #31 Oxy is applying a different post reclaim value for Arsenic. In this particular situation, the pit confirmation samples (04/30/2014, 05/07/2014), and mixed pit contents samples (04/30/2014 - 06/13/2014), Arsenic concentrations are above COGCC table 910-1 standards, but are below undisturbed background levels (see sampling locations on included location maps and sampling diagrams).

The sampling method Oxy employed was to take a representative random grab sample for each background sample location. The analytical concentration tables identify the COGCC Table 910-1 concentration levels, Oxy's undisturbed background concentrations, Oxy's pit confirmation concentrations, and Oxy's mixed pit contents concentrations. As is consistent with the COGCC Table 910-1 footnote 1 and frequently asked question #31, Oxy is applying a different Arsenic value for all post reclamation samples based on naturally occurring As values found in background samples.

Oxy is not currently addressing elevated concentrations of SAR or EC as this location as it is being reconstructed into a new Pond 10. Oxy will postpone capping this location until the end of the life of the pad (Pond 10 Production Pit). At that time, Oxy will follow all 900 series rules for pit remediation.

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

Signed: 

Print Name: Blair K. Rollins

Title: Regulatory Consultatant

Email: brollins@olssonassociates.com

Date: 7/10/14

Based on the information provided herein, this Sundry Notice (Form 4) complies with COGCC Rules and applicable orders and is hereby approved.

COGCC Approved:

Date:

**CONDITIONS OF APPROVAL, IF ANY:**

**General Comments**

**User Group**

**Comment**

**Comment Date**

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>

Total: 0 comment(s)

**Attachment Check List**

**Att Doc Num**

**Name**

<u>Att Doc Num</u>	<u>Name</u>

Total Attach: 0 Files

## **Pond 10 Complex Storage Ponds (Location IDs: 291946, and 414396)**

### **Reclamation and Closure Sampling Narrative**

This sampling narrative outlines the reclamation and closure of the storage ponds referenced within this document as Pond 10 N/S. This narrative is being provided in support of Oxy's Pond 10 N/S storage ponds closure documentation. As Pond 10 N and Pond 10 S were originally permitted as separate ponds each pond was sampled separately for the purposes of closure, however, as the two separate ponds were closed together with the intent of reopening and permitting it as a single pit, both of the closures will be addressed within this package. The narrative details what closure, and background samples were taken, where they were taken, and for what purpose.

#### ***Post Reclaim Samples***

##### ***Pond 10 N – 04/30/2014 (L696385)***

- Oxy removed the pit liner and removed all suspected contaminated soil from the pit bottom with a back hoe. The post reclaim samples consisted of five grab samples taken from various points located from the pit bottom and each pit side wall. Each sample was collected from 0"-12" deep from the pit surface. The pit bottom was approximately 15 feet below the pad surface. The post reclaim samples are represented in the Pond 10 Pit Conversion- Remediation Monitoring and Confirmation tabulated data spreadsheet and are in columns 9-13 labeled as "Closure Confirmation". The post reclaim sample date is 04/30/2014. The Sample Names from the data tabulation describe the approximate sample locations. The attached Pond 10 Sample Diagram shows post reclaim samples as yellow dots and are referenced in the legend as *Confirmation Pit Sample Location*. The lab data reports for these samples are attached. The sample values can be found on lab report L696385 and the Sample IDs from the lab report are *NORTH POND BTM* found on pages 2-3, *N POND N WALL* found on pages 4-5, *N POND S WALL* found on pages 6-7, *N POND W WALL* found on pages 8-9, *N POND E WALL* found on pages 10-11.

- Post reclaim values showed elevated concentrations for SAR and Arsenic. Native background soil samples within the area showed elevated concentrations of naturally occurring Arsenic to be present within the area, reference Background Samples section below.

##### ***Pond 10 S – 04/30/2014 (L696385), 05/07/2014 (L697664)***

- Oxy removed the pit liner and removed all suspected contaminated soil from the pit bottom with a back hoe. The post reclaim samples consisted of five grab samples taken from various points located from the pit bottom and each pit side wall. Each sample was collected from 0"-12" deep from the pit surface. The pit bottom was approximately 15 feet below the pad surface. The post reclaim samples are represented in the Pond 10 Pit Conversion – Remediation Monitoring and Confirmation tabulated data spreadsheet and are in columns 14, and 16-20 labeled as "Closure Confirmation". The post reclaim samples were collected on 04/30/2014, and 05/07/2014. The Sample Names from the data tabulation describe the approximate sample locations. The attached Pond 10 Sample Diagram shows post reclaim samples as yellow dots and are referenced in the legend as *Confirmation Pit Sample Location*. The lab data reports for these samples are attached. The sample values can be found on lab report L696385, and L697664. The Sample IDs from the lab report L696385 are *SOUTH POND BTM* found on pages 18-19, *SOUTH POND E WALL* found on pages 22-23. The Sample IDs from the lab report L697664 are *SOUTH POND W WALL* found on pages 2-3, *SOUTH POND S WALL* found on pages 4-5, *S POND E BTM EXC* found on pages 6-7, *S POND N WALL* on pages 8-9.

- Post reclaim values showed elevated concentrations for SAR, EC and Arsenic. Native background soil samples within the area showed elevated concentrations of naturally occurring Arsenic to be present within the area, reference Background Samples section below.

***Mixed Pit Contents 04/30/2014 (L696385), 05/07/2014 (L697664), 05/20/2014 (L700206), 05/29/2014 (L701719), 06/13/2014 (L704768)***

- The pit contents were staged on the pad to allow for drying and volatilization. The pit contents were mixed with stockpiled native clean material and sampled to pass for COGCC Table 910-1 analytical standards. Five 5-point composite samples were collected to represent the mixed contents as a whole and were analyzed for complete COGCC table 910-1 standards. Once the pile was characterized and passed Table 910-1 Standards, the material was returned to the excavation to serve as soil bed material for the installation of the new pond 10 liner system. The mixed pit content samples are represented in the Pond 10 Pit Conversion – Spoils Remediation and Confirmation tabulated data spreadsheet and are in columns 3-8, and columns 14-15. They are labeled as *Spoil Comp 1, Spoil Comp 2, Spoil Comp 3, S Pond S Wall Spoil 1, S Pond S Wall Spoil 2, S Pond S Wall Spoil 3, Spoil W. Side Comp 4 FT, and Pond 10 Spoil W. End* respectively in the Sample Name Row. Sample Type for the above mentioned samples is defined as *Spoil Closure Confirmation*. The mixed pit content samples were collected on 04/30/2014, 05/07/2014, 05/20/2014, 05/29/2014, and 06/13/2014. The sample values found on lab report L696385 and the Sample IDs from the lab report are *POND 10 SPOIL COMP 1* found on pages 12-13, *POND 10 SPOIL COMP 2* found on pages 14-15, and *POND 10 SPOIL COMP 3* found on pages 16-17. The sample values found on lab report L697664 and the Sample IDs from the lab report are *S POND S WALL SPOIL 1* found on page 7, *S POND S WALL SPOIL 2* found on page 8, and *S POND S WALL SPOIL 3* found on page 9. The sample values found on lab report L700206 and the Sample IDs from the lab report are *S END 2 FT* found on pages 2-3, *E END 8 FT* found on pages 4-5, *N END 1 FT* found on pages 6-7, *N END 10 FT* found on pages 8-9, and *W END 4 FT* found on pages 10-11. The sample values found on lab report L701719 and the Sample IDs from the lab report are *Spoil W. Side Comp 4 FT* found on pages 2-4. The sample values found on lab report L704768 and the Sample IDs from the lab report are *Pond 10 Spoil W. End* found on pages 2-3. The lab data reports for these samples are attached. The mixed pit contents samples are represented on the attached Pond 10 N/S Confirmation and Closure Sampling Diagram as white dots.

- The mixed pit contents samples were tested for complete COGCC table 910-1 standards. All analytes were found to be below COGCC table 910-1 standards with the exception of SAR, and Arsenic prior to being backfilled into the pit. Elevated concentrations of SAR will be unaddressed as this facility is being converted into a single Pond 10 pit. Native background soil samples within the area showed elevated concentrations of naturally occurring Arsenic to be present, reference Background Samples section below.

***Background Samples 04/20/2012, and 11/11/2011 (L571155, L546596)***

- In an effort to identify naturally occurring concentrations of Arsenic similar to that which was previously identified in the Post Reclamation samples, Oxy collected background samples from native undisturbed locations around the area. Oxy is presenting two background grab samples collected from two different locations near the facility location. The background samples were collected on 04/20/2012 and 11/11/2011 and can be found on the Pond 10 Pit Conversion - Initial Investigation/Background tabulated data in columns 3 and 4 respectively. The Sample Names from the data tabulation are *BG-AREA PT 74*, and *797-09A BG-NE 13 IN*. Sample Type for the above mentioned samples are defined as *Background 797-06-07* and *Background 797-09A* respectively. The sample values can be found on lab reports L571155 and the sample IDs from the lab report are *BG-AREA PT 74* found on page 16. The sample values can be found on lab reports L546596 and the sample IDs from the lab report are *797-09A BG-NE 13 IN* found on

pages 8-9. These samples are shown on the Pond 10 N/S Background Sample Locations Map as Green dots and are referenced in the legend as Background Sample Locations.

- The sampling effort yielded background Arsenic concentrations above those found in the Post Reclamation, and Mixed pit contents samples.

***Monitoring Well Samples 04/02/2014 (L691741), 04/11/2014 (L693506), and 06/16/2014 (L705026)***

- Four monitoring wells were placed around Ponds 10 N and 10 S to support the new Pond 10 construction and Form 28 submittal. One up gradient monitoring well to establish background values, and three down gradient to detect any ground water contamination. The monitoring well samples were collected on 04/02/2014, 04/11/2014, and 06/16/2014 and can be found on the Pond 10 Pit Conversion – Ground Water (MW) Sampling tabulated data in columns 3 through 14 respectively. The Sample Names from the data tabulation are P10-3, P10-1, P10-2, and P10-4 in that order repeated on each sample event on 04/02/2014, 04/11/2014, and 06/16/2014. Sample Type for the above mentioned samples are defined as Monitoring Well. The sample values can be found on lab reports L691741 and the sample IDs from the lab report are P10-1 found on page 2, P10-2 found on page 3, P10-3 found on page 4, and P10-4 found on page 5. The sample values can be found on lab reports L693506 and the sample IDs from the lab report are P10-1 found on page 2, P10-2 found on page 3, P10-3 found on page 4, and P10-4 found on page 5. The sample values can be found on lab reports L705026 and the sample IDs from the lab report are P10-1 found on page 2, P10-2 found on page 3, P10-3 found on page 4, and P10-4 found on page 5.

In conclusion, this pit has been closed and meets both the COGCC 900 series and 1000 series rules for pit closure. All analyte concentrations were found to be below COGCC table 910-1 allowable concentrations, below native background levels, or will be capped upon final pad reclamation to ensure a sufficient agronomic zone. Oxy will postpone cap placement until the end of the life of the Pond 10 Pit. Oxy will continue to monitor this site for stormwater compliance until final pad reclamation has occurred.



**OXY USA WTP LP**

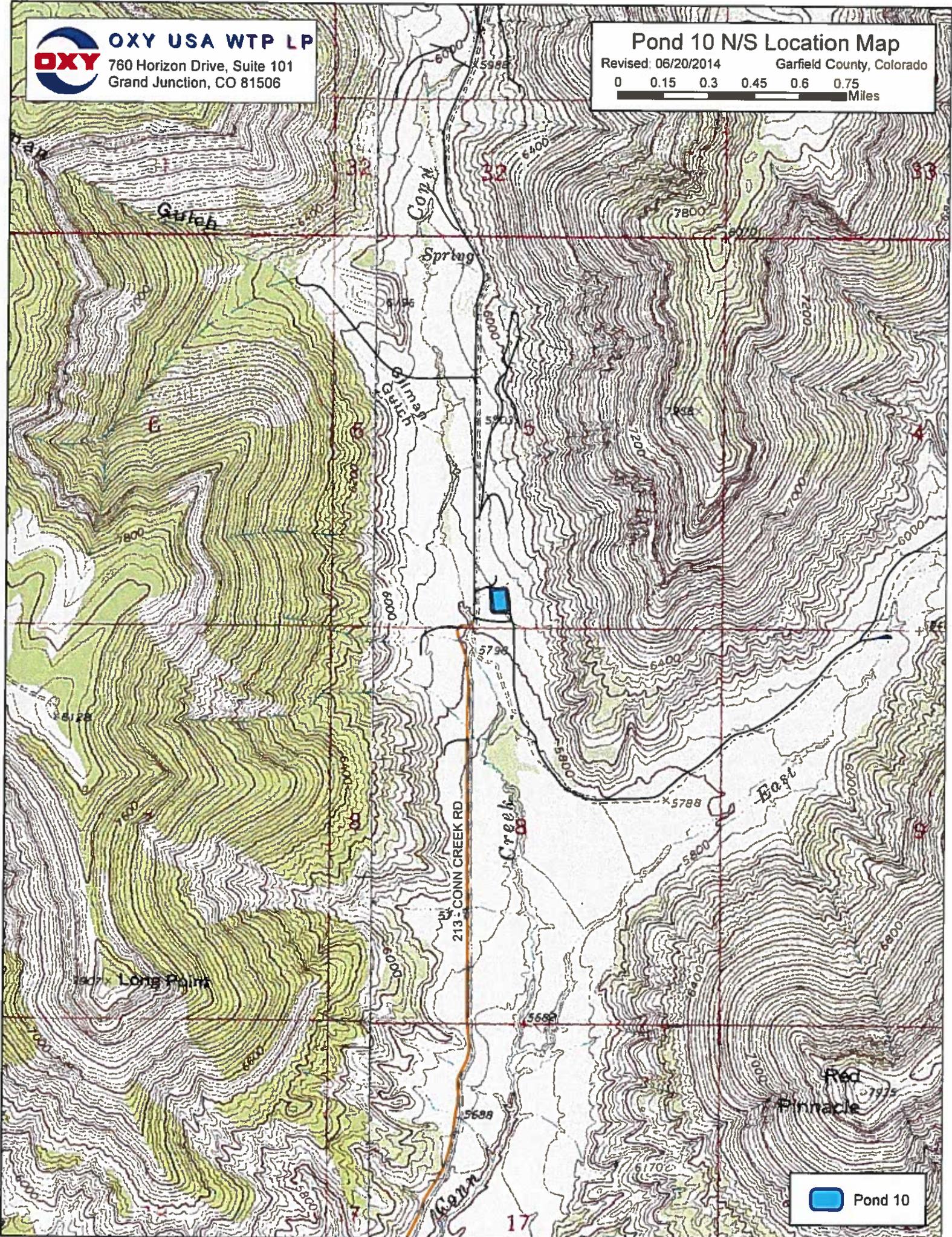
760 Horizon Drive, Suite 101  
Grand Junction, CO 81506

### Pond 10 N/S Location Map

Revised: 06/20/2014

Garfield County, Colorado

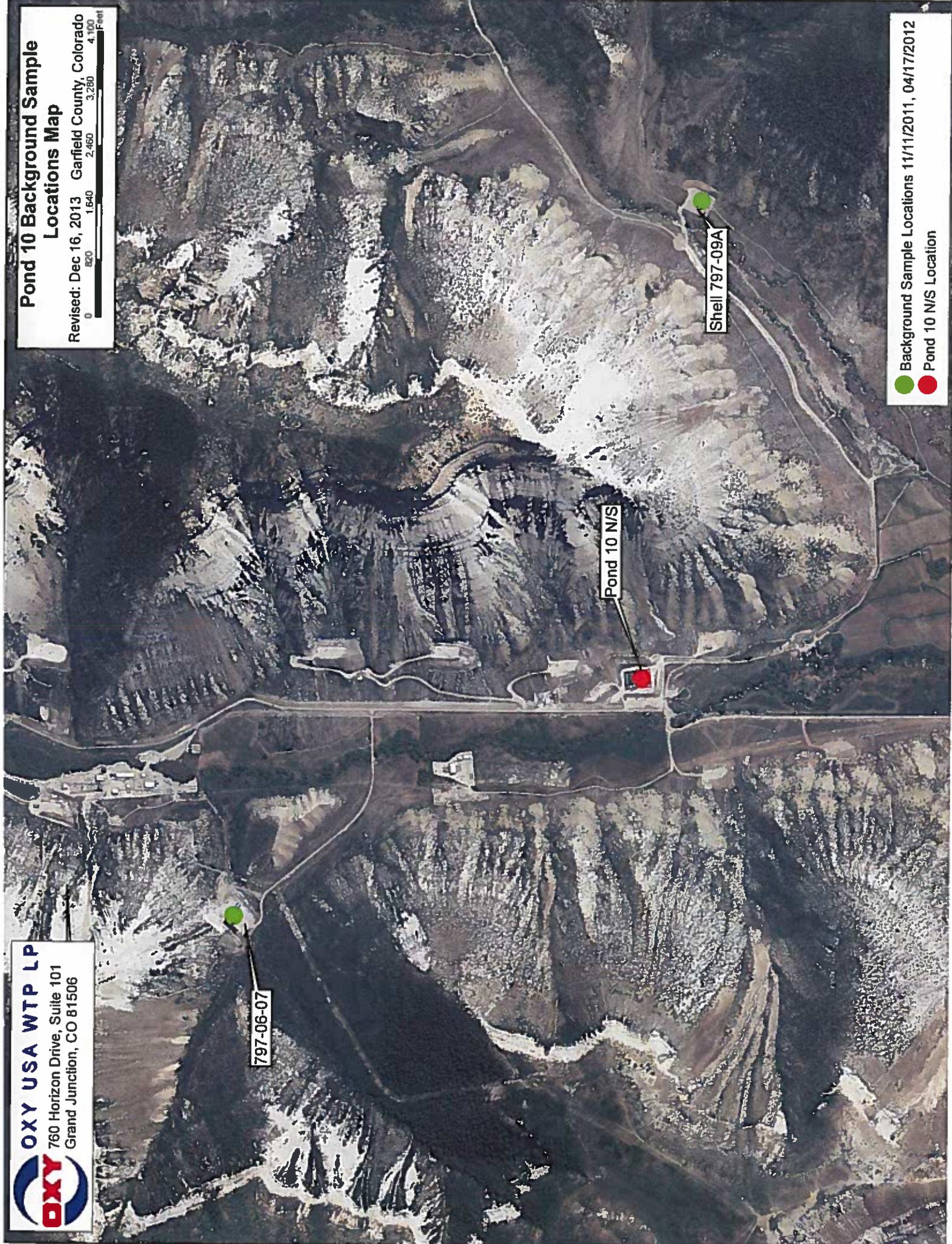
0 0.15 0.3 0.45 0.6 0.75  
Miles



Pond 10

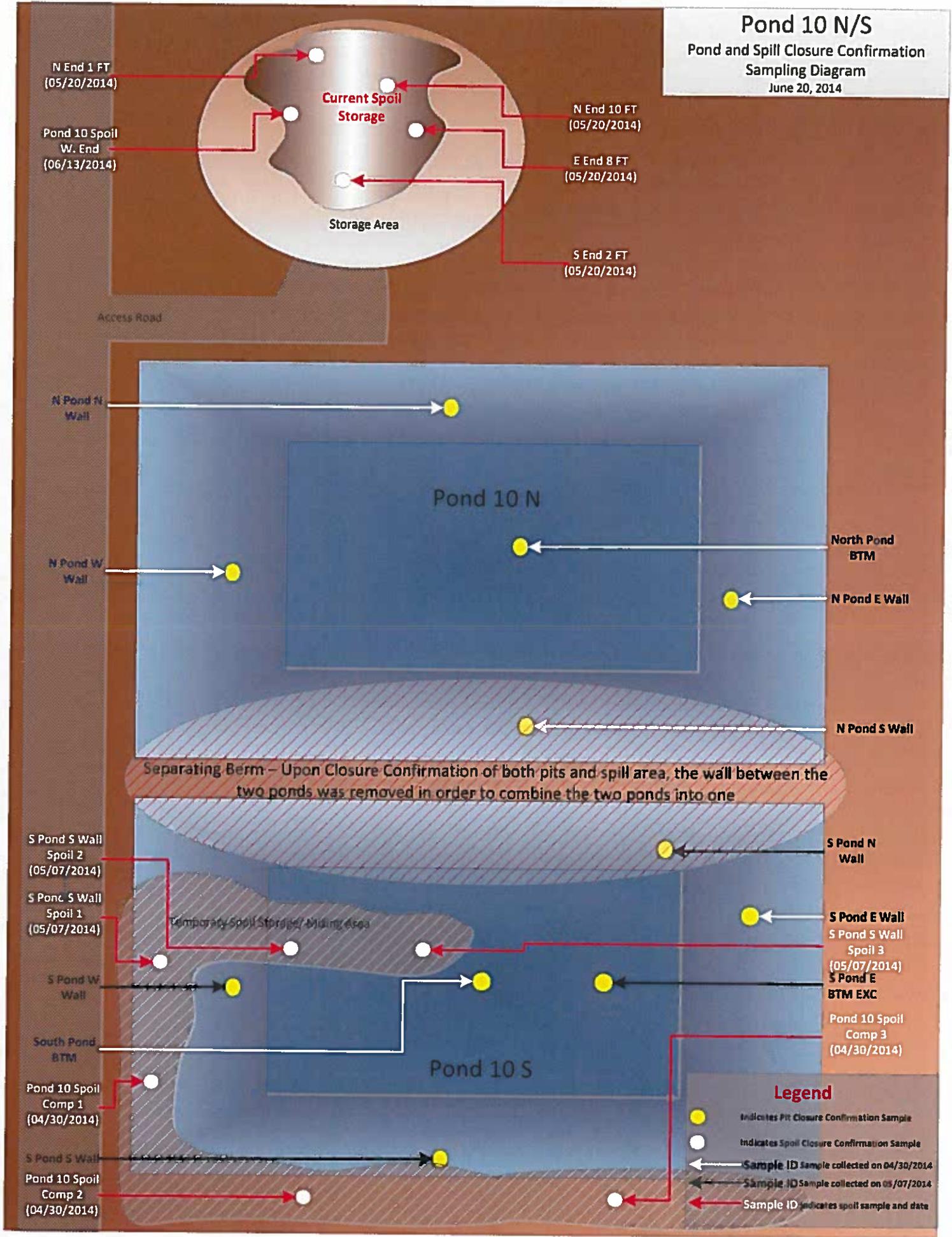
**Pond 10 Background Sample  
Locations Map**

Revised: Dec 16, 2013 Garfield County, Colorado  
0 820 1,640 3,280 4,100 Feet



# Pond 10 N/S

Pond and Spill Closure Confirmation  
Sampling Diagram  
June 20, 2014



Separating Berm – Upon Closure Confirmation of both pits and spill area, the wall between the two ponds was removed in order to combine the two ponds into one

- Legend**
- Indicates Pit Closure Confirmation Sample
  - Indicates Spoil Closure Confirmation Sample
  - ← Sample ID Sample collected on 04/30/2014
  - ← Sample ID Sample collected on 05/07/2014
  - ← Sample ID indicates spoil sample and date





# Pond 10 Pit Conversion - Spoils Remediation and Confirmation

Pad #: Pond 10  
 Sample Date:

	Sample Identification															
	Lab Report #	4/30/2014	4/30/2014	4/30/2014	5/7/2014	5/7/2014	5/7/2014	5/20/2014	5/20/2014	5/20/2014	5/20/2014	5/20/2014	5/20/2014	5/28/2014	6/13/2014	
	Date Sampled	4/30/2014	4/30/2014	4/30/2014	5/7/2014	5/7/2014	5/7/2014	5/20/2014	5/20/2014	5/20/2014	5/20/2014	5/20/2014	5/20/2014	5/28/2014	6/13/2014	
	Sample Type	Spot Closure Confirmation	Spot Closure Confirmation	Spot Closure Confirmation	Spot Closure Confirmation	Spot Closure Confirmation	Spot Closure Confirmation	Spot Closure Confirmation	Spot Closure Confirmation	Spot Closure Confirmation	Spot Closure Confirmation	Spot Closure Confirmation	Spot Closure Confirmation	Spot Closure Confirmation	Spot Closure Confirmation	
	Sample Name	Pond 10 Spoil Comp 1	Pond 10 Spoil Comp 2	Pond 10 Spoil Comp 3	S Pond S Wall Spoil 1	S Pond S Wall Spoil 2	S Pond S Wall Spoil 3	S End 2 FT	E End 8 FT	N End 1 FT	N End 10 FT	W End 4 FT	Spoil W. Side Comp 4 FT	Pond 10 Spoil W. End		
	MCL (mg/kg)															
<b>Organics in Soil</b>																
<b>Total Petroleum Hydrocarbons - GRO</b>	500	110.0	100.0	82.0	BDL	1.8	6.0	59.0	12.0	BDL	1.4	17	31	BDL		
<b>Total Petroleum Hydrocarbons - DRO</b>																
Benzene	0.17	18.0	88.0	98.0	16	4.7	41	54	450	60	13	500	670	20		
Toluene	85	BDL	BDL	BDL	0.0064	0.079	0.011	BDL	BDL	BDL	BDL	0.0061	BDL	BDL		
Ethylbenzene	100	BDL	0.035	0.035	BDL	0.009	BDL	0.046	0.0073	BDL	BDL	BDL	BDL	BDL		
Xylenes	175	0.75	1.00	0.78	BDL	0.028	0.035	1.5	0.41	BDL	BDL	0.18	BDL	BDL		
<b>Organics in Soil (PAH's)</b>																
Acenaphthene	1000	BDL	0.011	0.012	BDL	BDL	BDL	0.010	BDL	0.019	BDL	BDL	0.027	BDL		
Anthracene	1000	BDL	0.007	0.006	BDL	BDL	BDL	0.0092	BDL	0.0180	BDL	BDL	0.036	BDL		
Benz(a)anthracene	0.22	BDL	BDL	BDL	BDL	BDL	BDL	0.028	BDL	BDL	BDL	BDL	BDL	BDL		
Benz(b)fluoranthene	0.22	BDL	BDL	BDL	BDL	BDL	BDL	0.069	BDL	BDL	BDL	BDL	BDL	BDL		
Benz(k)fluoranthene	2.2	BDL	BDL	BDL	BDL	BDL	BDL	0.021	BDL	BDL	BDL	BDL	BDL	BDL		
Benz(a)pyrene	0.022	BDL	BDL	BDL	BDL	BDL	BDL	0.058	BDL	BDL	BDL	BDL	BDL	BDL		
Chrysene	22	BDL	BDL	BDL	BDL	BDL	BDL	0.043	BDL	BDL	BDL	BDL	BDL	BDL		
Dibenz(a,h)anthracene	0.022	BDL	BDL	BDL	BDL	BDL	BDL	0.0091	BDL	BDL	BDL	BDL	BDL	BDL		
Fluorene	1000	BDL	0.037	0.039	0.008	BDL	BDL	0.0095	BDL	0.075	0.014	BDL	0.093	0.013		
Fluoranthene	1000	0.010	0.037	0.039	BDL	BDL	BDL	0.025	BDL	BDL	BDL	BDL	0.260	0.048		
Indeno(1,2,3-c,d)pyrene	0.22	BDL	0.2	0.2	0.036	BDL	BDL	0.110	0.051	0.260	0.054	BDL	0.260	0.048		
Naphthalene	23	0.1	0.2	0.2	0.036	BDL	BDL	0.130	BDL	BDL	BDL	BDL	0.007	BDL		
Pyrene	1000	BDL	BDL	BDL	BDL	BDL	BDL	0.130	BDL	BDL	BDL	BDL	0.007	BDL		
<b>Inorganics in Soil</b>																
EC (Background = 0.24; Shell 797-09A)		<4 mmhos/cm or 2X background	3.100	3.900	2.100	4.500	2.600	4.600	2.700	2.700	3.000	2.800	3.200	3.900	3.900	
Sodium adsorption ratio (SAR)		<12	13.0	18.0	17.0	19.0	14.0	14.0	12.0	14.0	13.0	14.0	17.0	18.0	17.0	
pH		6-8	8.0	8.0	8.2	7.8	8.0	7.7	7.9	7.9	7.8	7.9	7.8	8.0	7.7	
<b>Metals in Soils</b>																
Arsenic (Background = 22; Shell 797-09A)	0.39	5.8	8.9	10.0	11.0	9.2	9.1	6.7	7.7	9.2	8.4	9.0	12.0	8.8		
Barium (LDNR True Total)	15,000	240.0	260.0	260.0	220.0	190.0	190.0	190.0	240.0	250.0	210.0	230.0	290.0	230.0		
Cadmium	70	BDL	0.6	0.7	BDL											
Chromium III	120,000	14.0	17.0	17.0	15.0	15.0	15.0	12.0	13.0	15.0	10.0	14.0	22.0	16.0		
Chromium VI	23	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL		
Copper	3100	11.0	14.0	15.0	17.0	15.0	18.0	12.0	13.0	16.0	13.0	14.0	20.0	16.0		
Lead	400	7.3	9.4	11.0	8.5	8.0	8.2	6.2	6.3	8.1	6.2	7.2	11.0	8.6		
Mercury	23	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.020	BDL		
Nickel	1600	10.0	13.0	13.0	13.0	12.0	14.0	10.0	12.0	14.0	12.0	13.0	16.0	11.0		
Selenium	380	BDL	2.2	3.3	BDL											
Silver	390	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL		
Zinc	23,000	44.0	55.0	99.0	59.0	54.0	63.0	47.0	52.0	57.0	48.0	53.0	88.0	60.0		

BDL = below detection limit from lab  
 GRO = gasoline range organics  
 DRO = diesel range organics

**Pond 10 Pit Conversion - Ground Water (MW)  
Sampling**

		Sample Identifications											
Lab Report		L691741	L691741	L691741	L691741	L693506	L693506	L693506	L693506	L705026	L705026	L705026	L705026
Date Sampled		4/2/2014	4/2/2014	4/2/2014	4/2/2014	4/1/2014	4/1/2014	4/1/2014	4/1/2014	6/16/2014	6/16/2014	6/16/2014	6/16/2014
Sample Type		Monitoring Well	Monitoring Well	Monitoring Well	Monitoring Well	Monitoring Well	Monitoring Well	Monitoring Well	Monitoring Well	Monitoring Well	Monitoring Well	Monitoring Well	Monitoring Well
Sample Name		P10-3 (BG)	P10-1	P10-2	P10-4	P10-3 (BG)	P10-1	P10-2	P10-4	P10-3 (BG)	P10-1	P10-2	P10-4
Organics in Water	MCL (mg/L)												
TPH GRO		NA	NA	NA	NA	NA	NA	NA	NA	BDL	BDL	BDL	BDL
TPH DRO	500	NA	NA	NA	NA	NA	NA	NA	NA	1.9	0.16	0.34	1.7
Benzene	0.005	BDL	BDL	BDL	BDL	NA	NA	NA	NA	BDL	BDL	BDL	BDL
Toluene	0.56 to 1.0	BDL	BDL	BDL	BDL	NA	NA	NA	NA	BDL	BDL	BDL	BDL
Ethylbenzene	0.7	BDL	BDL	BDL	BDL	NA	NA	NA	NA	BDL	BDL	BDL	BDL
Xylenes	1.4 to 10	BDL	BDL	BDL	BDL	NA	NA	NA	NA	BDL	BDL	BDL	BDL
Inorganics in Water													
Total Dissolved Solids	<1.25 x background	NA	NA	NA	NA	NA	NA	NA	NA	1800	1400	1600	2800
Chloride	<1.25 x background (200)	NA	NA	NA	NA	160	81	66	240	100	96	80	210
Sulfate	<1.25 x background (1238)	NA	NA	NA	NA	990	620	750	1400	920	650	820	1300
Dissolved Metals In Water													
Arsenic		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field Parameters													
Temp C		13.91	12.21	11.96	12.08	13	11.5	12.4	12.8	13.4	12.4	12.7	13
SPC (mS/cm)		2.89	2.17	2.51	4.13	2.67	2.141	2.35	3.792	2.613	2.198	2.484	3.684
DO (mg/L)		2.39	1.67	1.54	2.17	0.91	1.03	1.29	0.13	0.59	1.05	1.49	0.9
pH		8.19	8.26	8.17	8.08	7.35	7.45	7.43	7.33	7.55	7.72	7.82	7.47
Salinity		1.45	1.09	1.27	2.33	1.39	1.11	1.21	2.02	1.36	1.13	1.62	1.95
TDS (mg/L)	2170 (mg/L)	NA	NA	NA	NA	1736	1391	1501	2476	1703	1423.5	1618	2405
DO sat		25.7	25.7	21.8	28.1	8.9	9.1	12.2	1.2	5.7	9.9	15.6	8.7